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NEW METHOD OF WORKING PIG IRON.

We present this week illustrations of "Player's Blooming Process" which is said to be very efficient for producing large masses of iron and for saving labor to a great extent, from the fact that no such things as "balling up" "muck rolling," cutting, piling and reheating are required. The mass can be taken in its heated state directly from the hydraulic press to the finishing rolls. This is an advantage, so claimed by the inventors, of the greatest importance to rail makers, makers of beams, heavy shafting boilers, &c., either of iron or of puddled steel. It is moreover claimed by the inventors that this process

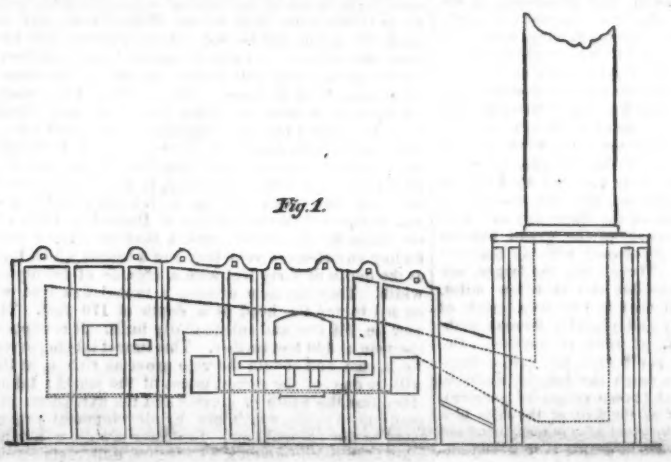


Fig. 1.

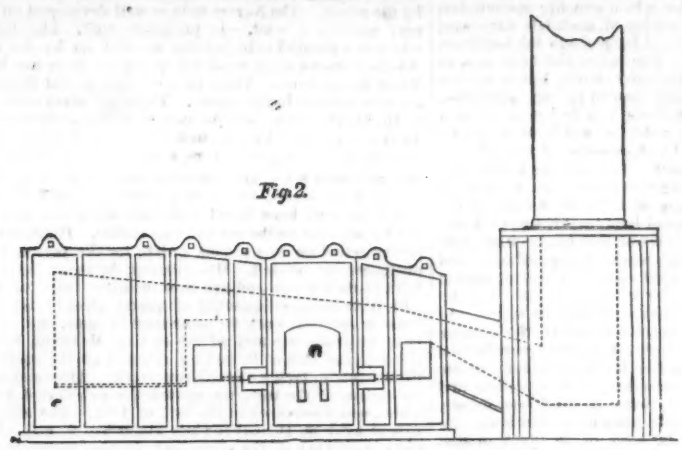
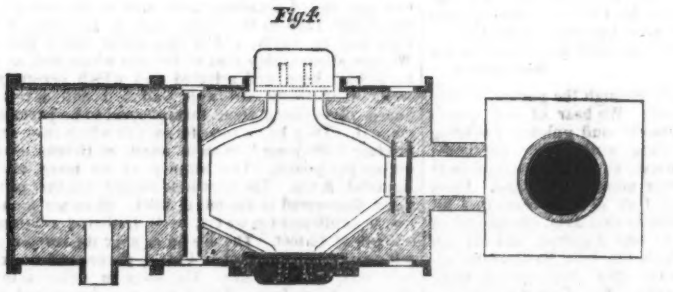


Fig. 2.



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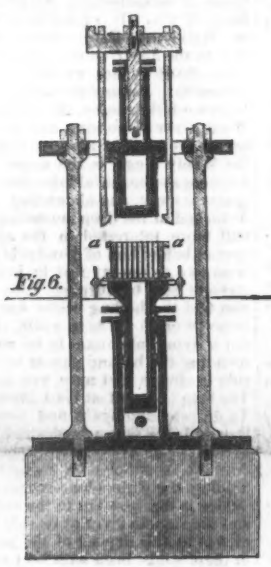

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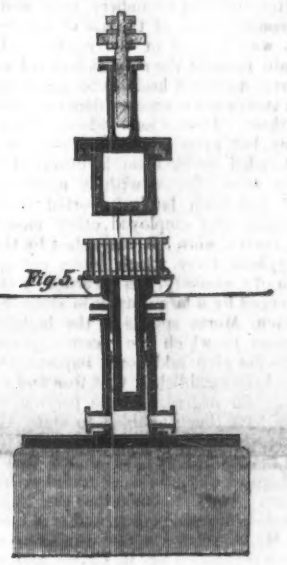

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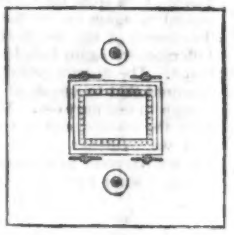

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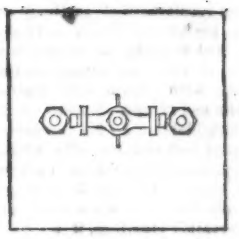

Fig. 8.

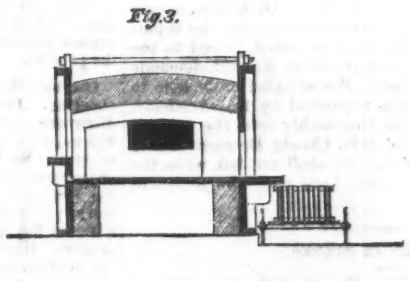

Fig. 3.

JOHN PLAYER'S IMPROVEMENTS IN THE MANUFACTURE OF BALLS, BLOOMS, OR SLABS OF MALLEABLE IRON OR STEEL.

"will enable iron masters to produce from their present works, steel rails in one mass, without welds, and at prices and quality to compete with 'Bessemer' Rails. Also, to produce large masses of iron without piling; and for the ordinary production of merchant iron a saving of 25 per cent. on the cost, and an increased quantity from their works of fully one-third." The object is to facilitate the forming of a ball, bloom or slab, of iron or steel, after it has been deprived of a portion of its carbon and impurities by the puddling operation, and consists in transferring the semi-fluid malleable iron or steel, into a form or mould outside the furnace in which the iron was operated upon and subjecting the metal to a heavy pressure in the form or mould, thus causing it to agglutinate or weld together into a ball, bloom or slab—instead of "balling it up" by hand in the furnace in which it has been converted, which is the method at present adopted with puddled iron or steel. For this purpose, the crude or pig iron to be made into malleable iron or steel, is melted in a cupola or reverberatory furnace, and the fluid metal is there agitated, either in the same furnace in which it is melted, or otherwise, either by manual labor or steam power, or both, in contact with fluid oxide of iron and other matters, (as is usual when puddling iron), until the mixture boils or froths up and the iron becomes malleable; or, as it is termed, is "brought to nature." When in this state, the semi-fluid mass is forced or drawn out of the furnace in which it has been agitated, into a cast, or wrought iron receiver, form or mould. In this receptacle it is then compressed to such degree of density, that it can be removed from the mould and forged or rolled to the size that is required. Whether the pig or crude iron operated on be converted into malleable iron or steel by machinery or manual labor, the process will be the same after the metal has been brought "to nature," or, in other words, made malleable. One may suppose a common puddling furnace to be used.

Figure 1, of the annexed drawings, is a front elevation of a common puddling furnace in which slight alterations have been made to adapt it to this process; Figure 2, a back elevation; Figure 3, a cross vertical section; and Figure 4, a horizontal section thereof. Figures 5 and 6 are vertical sections, taken at right angles to each other, of the hydraulic ram for pressing the puddled metal into a bloom; Figure 7 is a plan thereof; and Figure 8 is a horizontal at the line *a a* of Figure 6. It is preferred there should be two doors opposite each other; one, the working door, is of the usual construction; the other door opens to the level of the hearth; it may be constructed and opened with a lever in the usual way. Before the furnace is charged, this door is shut and wedged close, and fettling of red iron ore or other material is rammed from the working door against the lower part of it, so that the fluid mass, when melted in, or, by preference, poured into the furnace, cannot run under the door.

The operation of puddling is then commenced, and the charge worked in the usual manner, until the metal falls and is fit to ball up; it is then turned over in the slag and exposed regularly to the flame for a short time. In making steel, the operation is hastened towards the end. The slag is then partly run off in the usual way, the lower door is then opened, any fettling in front of it removed, and the whole or part of the charge, as may be required, is pushed or forced with a rabble or tup (which is introduced at the working-door), out at what is termed the back door, into a form or mould hereafter described. As soon as the furnace is clear, which only takes two or three minutes, the back door is shut and the furnace refettled and charged again with metal, run in, by preference, in a melted state from a cupola furnace. The saving of time in puddling one charge by this method is said to be about twenty-five or thirty minutes. That is the time it takes the pig to melt, and the time the charge takes to ball up. The mould into which the puddled metal has fallen, is, by preference, made of vertical bars of square iron. It may be constructed, as shown at *a a*, of square bars rivetted inside two strong hoops of iron, the heads of the rivets being flush on the inside; this forms a receptacle with open top and bottom. The

mould is placed on a low bogie, so that the top of the mould can be brought under the level of the sill of the back door of the furnace, to receive the puddled metal when pushed through the back door. If the metal has not been sufficiently worked in the puddling furnace, jets of blast from tuyeres suitably placed may be caused to impinge on it during the time it is discharged from the furnace; air thus applied, the inventors claim, improves the quality of the iron, though it causes more waste. Olefiant gas, they say, may be used with advantage when "puddled steel" is being made, as it will prevent the carbon from being burned out during the time the charge is being pushed out of the furnace. The bogie should, after the puddled metal is on it, be removed as quickly as possible to the press, which by preference, should be a hydraulic ram worked by an accumulator. The arrangement preferred is shown by figures 5, 6, 7 and 8. The bogie fits on the top of the ram, and is carried upwards by it. Over the mould is a block of cast iron which fits into it, when the ram raises the mould and the block comes in contact with the puddled metal, which is thus pressed into a bloom. On the top of the block, which fits into the mould, is another ram, fixed to which is a cross-head and hooks so arranged that it may be fastened to the hoops surrounding the mould; then by giving an upward motion to the upper ram, the mould is raised up the side of the block, thus leaving the bloom of iron or steel on the bogie, which is then lowered and the bloom taken to a hammer or rolls, or otherwise disposed of. The mould is lowered on a bogie and used as before.

JAMES HENDERSON is the agent for the invention, and all particulars relating to licenses, &c., may be learned of him at No. 30 Broadway, Room 14.

Cast-Iron Stoves A Cause of Disease.

When the attention of the Academy of Sciences, of Paris, was drawn, some time since, by M. Carret, one of the physicians of the Hotel Dieu of Chambery, in several papers, to the possible evil consequences of the use of cast-iron stoves, but little interest was excited in the matter. Recently, Gen. Morin has again brought the subject forward with better success. M. Carret does not hesitate to assert most positively, that cast-iron stoves are sources of danger to those who habitually employ them. During an epidemic which recently prevailed in Savoy, but upon which M. Carret does not furnish us with any detailed information, he observed that all the inhabitants who were affected with it made use of cast-iron stoves, which had been lately imported into the country; whereas all those who employed other modes of firing, or other sorts of stoves, were left untouched by the disease. An epidemic of typhoid fever, which broke out some time after at the Lyceum of Chambery, was regarded by the same author as being influenced by a large cast-iron stove in the children's dormitory. Gen. Morin speaks in the highest terms of M. Carret's memoirs, to which the recent experiments of MM. Trost and Deville give additional importance. These able investigations have established that iron and cast-iron, when heated to a certain degree, become pervious to the passage of gas. They have been enabled to state the quantity of oxide of carbon which may, as they suppose, transude from a given surface of metal, and have shown that the air which surrounds a stove of cast-iron is saturated with hydrogen and oxide of carbon. They conclude that cast-iron steves, when sufficiently heated, absorb oxygen, and give issue to carbonic acid. Gen. Morin related some comparative experiments which had been performed by M. Carret, and which, he said, corroborated this theory. Thus, after having remained during one full hour in a room heated to 40° (centigrade) by means of a sheet-iron stove, M. Carret perspired abundantly, got a good appetite, but felt no sickness whatever; he had obtained the same result with an earthenware stove; but the experiment, when performed during only one half hour with a cast-iron stove, had brought on intense headache and sickness. M. Deville, at the same sitting of the Academy, supported these views with considerable warmth. The danger which attended the use of cast-iron stoves, he said, was enormous and truly formidable. In his lecture-room at the Sorbonne, he had placed two electric bells, which were set in motion as soon as hydrogen or oxide of carbon was diffused in the room. Well, during his last lecture, the two cast-iron stoves had scarcely been lit when the bells began to ring. These facts are certainly startling, if we consider the reputation of comparative harmlessness which these articles of domestic use had hitherto enjoyed. In France, particularly, the lodgings of the poorer classes, the barrack-rooms of the soldiery, the artists' studios, the class-rooms of large schools, etc., are commonly heated by this means. Of course, we are inclined to question M. Carret's conclusions; but the apparently accurate character of the facts recorded, joined to the authority of those who have brought them forward, demands for them a serious investigation. We are glad to be able to add that a committee has been appointed by the Academy, for the purpose of examining thoroughly into the subject. This committee is composed of MM. Claude Bernard, Morin, Freimy, Deville, and Bussy; and we shall not fail, when the time comes, to mention what shall have been the results of their researches.—*Lancet.*

Prevention of Smoke.

A correspondent writes: "The theory of the prevention of smoke is very simple; it is only necessary to secure the burning of the gases, instead of letting them escape, unconsumed, up the chimney; and in every invention which has yet been brought forward, the object sought to be achieved is the passage of the products of the newly-supplied coal over that which is already a bright red. One class of inventors has endeavored to accomplish this by turning the gases back with a deflector placed behind the fire; another has employed two furnaces, and fed them alternately; and the third has supplied additional air, so as to mix with the gases, and facilitate their burning on the incandescent mass. Now, all these automatic arrangements are rendered unnecessary if the stoker exercise ordinary care. All he has to do is to well push back the red-hot coals in the furnace, and feed the fresh coal near the mouth; and, consequently, the steam company mentioned, found that they only had to give the men two shillings extra upon their week's pay if they avoided making smoke, and fine them one shilling if they made smoke, to insure an entire absence of the nuisance, and increased economy in the use of coal.

Mining Summary.

GOLD AND SILVER.

Montana.

[From our Regular Correspondent.]

VIRGINIA CITY, M. T., April 17, 1868.

WILLIAMS' AND BARTON'S DISTRICTS.

The above districts carry us to the west and southwest lines of the county of Madison, and require at our hands a brief description rather of a geographical than mineralogical character. Williams' district lies almost entirely within the Silver Belt of ranges heretofore described as Brown's district, on the east, and the western and southwestern boundary of this district may be said to be the western limit of the Belt, at least as far as can be determined from the surface, for the immense wash and deposit of sand, gravel and debris of a general character renders it impossible, without developement, to determine the exact geological formation of what is known as the Ruby mountain, dividing Williams' district from Barton's on the west. The immense gulches or contracted canyons of Ruby mountain show beds of gravel and sand two and three hundred feet in thickness; and wherever these beds have been prospected, shot gold has been found, sometimes in quantities that would pay to work the banks by hydraulics if it were possible to obtain sufficient water; and here let me remark that I have traced on the surface the plainly-defined bed of some ancient river that once flowed over or through the main divide of the Madison and Jefferson rivers, now at an elevation of thousands of feet above the level of the sea.

CRYSTAL LAKES, GUYSERS, A RIVER OF BOILING HOT WATER, THE FALLS OF THE MADISON, ETC.

If your readers will pardon the digression, I will add that south and west of this immense wash to the main divide of the Rocky mountains is a country, yet unexplored only by the hunter and trapper of the Rocky mountains. The grand chain here makes a sweep to the south and east, and forms an elevated plateau, which, on the north and east, abounds in crystal lakes—the home of innumberable flocks of swan, and abounding in the finest of fish. It is from these lakes that the Sassamiri or Stinking Water river has its source, on the one side flowing northeasterly to the Jefferson river, while Dry and Camas creeks flow from lakes (hard by but westerly) southwest into Snake river of the Columbia. Passing on in this lovely basin for a few miles in a southwesterly course, the explorer finds himself confronting the Wind River mountains, and in what is known as Hot Spring valley, at the head of the west fork of Madison river, while beyond the Windy range is the upper valley of the Yellowstone river. Leaving the beautiful lake, rendered more pleasing by flocks of graceful swan, and abounding in delicious fish, the traveller is disturbed at the deep muttering tones of the three guysers, and still more interested in the appearance of the grand plateau spread before him of hundreds of cone-shaped hillocks that rise from two to twenty feet in height. These, like the larger, are guysers, and by turning your course due east in a few miles, you find the boiling water has collected and forms a creek of some 20 or 25 yards in width, slowly and placidly flowing without a living inhabitant in its waters, or upon its surface. Descending the boiling stream on the south side, for half a day's ride in slough and mire, you at once reach the falls of Madison. The leap is one of at least 200 feet, (by some estimated greater). To descend and again find yourself at the foot of the falls is a task of labor not to be desired by the most adventurous, and yet in looking up and around you, you exclaim that you would endure it o'er and o'er for the gratification you now enjoy in beholding the stupendous scenery by which you are surrounded. Suffice it that you are in the same region of wash left days ago, and the smooth river at its side has cut its passage for hundreds of feet in this deposit of the past. The miner has here, too, in in these wilds, been with his pan, pick and shovel, but so far has failed to find the deposit of glittering sand in paying quantities. Passing the upper canyon of the Madison, you find yourself in a most beautiful valley of several miles in width, now grown broader but still gentle in current by the volume of several tributaries, both from the north and south. Leaving the valley and ascending again one of the northern tributaries, you soon reach the summit of the mountain dividing us from the waters of the Jafferson, we again behold the conical land mountains of Ruby range. The district called Barton's is one that has been so little explored that to speak of the mines would be speculative and foreign to our purpose. Veins of gold and silver bearing quartz mark the surface, and as you pass over it, on every side may be seen the evidence of immense and powerful igneous action. As it is my purpose to examine this district carefully the coming season, I shall forbear at present from stating any conclusions that could be drawn from the immense wash described, or the volcanic character of the surface seen west of this deposit, and the sudden change of the direction of course of the Grand divide, or particularize the mineral formations known to exist here. So much of Williams' district as may lie west of the creek of that name is mostly within the wash, and that east is so similar to the description already given of Brown's district, that it is unnecessary to repeat. The Rochester and Colorado Mining company of your State are operating here, but as we have not examined personally any of their leads, we shall pass them by for the present.

WM. LOVELL.

Our news from Montana this week through the papers, is very cheering. The territory is full of life. We hear of new quartz discoveries, new mills, new rich placers and gulches (yielding $25 nuggets) and new silver smelting works. The continued success of Mr. Esler, with his furnaces, at Augusta, is especially cheering to all interested in the silver mines of Montana. From the Virginia City *Democrat* of the 18th ult., we learn that his works produced, a few days previous to that date, another lot of silver of fine quality, amounting to one hundred and sixteen pounds. His results have infused new life into Rattlesnake silver district, and we look for a similar effect here, among those interested in that locality especially. The *Democrat* says:—Yesterday we were favored with a visit from Mr. Bray and Mr. J. A. Brown, both of Argenta. They give encouraging accounts of silver mining in Rattlesnake district. Mr. Esler's works there have proven a complete success, and demonstrated the value of the ores of that district. A number of parties are talking of putting up furnaces there this season. Mr. Rompf, the constructor of the Esler furnace, is now in Silver Star district, on the Jefferson river, engaged in erecting a furnace to smelt the rich silver ores of that section. Mr. Brown is the representative of the St. Louis and Montana Mining company, and is in charge of their works at Argenta. He is now engaged in sinking upon the leads, belonging to that company, and expresses the belief that his company will again commence active operations in that district this season..... The reports from Ramsborn gulch, situate eighteen miles north of Virginia City, are decidedly encouraging. Small nuggets, weighing in value from one dollar and thirty-five cents to one dollar and fifty cents each, are daily taken out with a species accompaniment of shot gold. No fine gold has yet been sluiced out, owing to the extreme coldness of the weather, but from the success of the past labor, the company confidently hope to increase their yield considerably, soon as the weather (which must be immediately) permits the sluicing out of the boxes. Two large companies are busily at work there..... The natives of Hot Spring district recently stampeded to Canadian gulch, northwest of Sterling a few miles, and staked it off from source to mouth. Some parties have been prospecting there for some time past, and recent developments, demonstrating the existence of gold there in paying quantities occasioned the excitement. In Norwegian gulch which is but a short distance from Canadian, profitable mining has been carried on to a greater or less extent for several years, and several companies have built flumes which are now on the bed rock, and will beyond doubt take out a great quantity of gold this season. The flume of Messrs. Hopkins, Davis & Co., was completed to the bed-rock last fall just as the season closed. A few days before they quit work for the winter they realized $30 a day to the hand, which yield placed the value of the mines beyond a doubt. This company are now only waiting for the frost to get out of the ground to commence operations in earnest....., We learn from Mr. T. Mapes, superintendent of the Hot Spring Mining company, who is now sojourning in our city, that their quartz mill will be started to work in about six weeks hence. The company have run a tunnel three hundred and eighty feet long, to strike the Monitor lode, which, by the diagonal course now being followed, they expect to do early the present month..... The same paper of the 4th says of the Yellowstone mines: A few days since a party of four men arrived here from the Yellowstone river, and report that they have made some new discoveries of placer mines on a tributary of that stream, which they claim to be good. They exhibited some nuggets of gold which were represented to have been taken from their discovery with a pan. One nugget weighed about twenty-five dollars, the rest were much smaller. These mines they represent to be about 40 miles above Emigrant gulch and upon the same side of the river; they consist of bars that appear to be quite extensive and easily worked. These men belong to a party of seven that have been in that section of the country since October last, hunting and prospecting during the winter, and have come in for supplies, leaving their companions there. They run a drift some distance into the bar in which they discovered the gold, and found a bed of gravel six to eight feet in depth, and they report that little labor and expense will bring an abundance of water upon it to work. Upon the strength of these representations, same eight or ten of our citizens were yesterday preparing outfits to return with them to the Yellowstone, and we have no doubt the result will be that extensive mines will be discovered there this season. A party of miners have also been during the winter prospecting still further up the Yellowstone and not a great ways from the lakes. Two of them have made their way out upon snow shoes to obtain provisions and report that they have discovered fair gold diggings. They will take supplies in there and remain during the season.....J. D. Ritchie furnishes the following items of news from Deer Lodge county: He says he arrived in Red Mountain City, in Highland gulch, on the 12th ult., and there examined the well-known Ballarat lode, which was discovered on the 22d day of December, 1866. On Discovery claim the discoverers sunk a shaft of sixteen feet deep, and finding an extensive vein, they run a tunnel which tops Discovery at the depth of forty feet with a crevice of twenty-eight feet in width. They are now driving a tunnel 6x6 feet, which is designed to tap the head at a depth of 170 feet. This tunnel is now in 240 feet and substantially built. It is expected to strike the vein at 140 feet further. This tunnel is being driven on claim No. 3, east, and should the vein prove as rich as at Discovery, it will be one of the richest mines of the world; taking into consideration the width of crevice and the extensions that have already been made, which are by development proven to be as good as the original lode. Professor Swallow has made a contract with the discoverers to erect a mill early in the summer, when it is anticipated that large yields of the precious metals will be the result. The Nevins lode is well developed on the Discovery, and No. 3, east. It prospects well. The Only Chance, which is a parallel lode, is being worked on by the discoverers. We were shown some beautiful specimens from the Masonic and Major Boyce lodes. These last two are recent discoveries, and promise to be valuable mines. There are many other good leads in Highland district, and the miners of this camp are the most industrious of any I have visited, for all are at work on their own ground or laboring for others, acquiring interests for themselves. Mr. Mansfield & Co. are sinking a shaft on the bar, at the lower end of Main street, where they expect to find the pay-streak, which has only been found some distance above and below, and not by any one on the intervening claims. Highland gulch cannot be relied on as a paying gulch, for the reason that the deposits are too spotted. Her citizens, however, have undoubted faith in their leads, and are now waiting only for mills, which will, from the great quantity of quartz already taken out, keep them in constant work for some time to come, and will add greatly to the prosperity and wealth of Red Mountain City. We arrived on the 15th at Butte City, situated on the southern slope of the mountain, facing Silver Crow creek. After a short rest from the fatigue of the trip, we visited the celebrated Parrott lode, which was discovered in the fall of 1864. The discoverers are now at work on Discovery; and claim No. 2, east of Discovery, has a shaft 14x6 in the clear and 40 feet perpendicular, and a crevice of from three to four feet of solid ore, with some thirty tons now raised, awaiting some mill or furnace process. No. 2 has a shaft 12x6 in the clear, and is 135 deep, with a crevice eight feet in width, and of this about thirty feet of solid ore. We saw about eighty tons of the ore which had, as it seemed to us, to have been well selected and which certainly must yield well. Both shafts are well timbered and covered over with houses; everything about them seemed to be permanent and substantial. They had a rude furnace in which they smelted ore to produce 2,700 pounds of metal worth, at Helena, as reported, two, dollars per pound. The furnace, as we learn, was erected by Ramsdel & Co. The next lode visited was that of the Mountain Chief, discovered in the fall of 1864. Here we found a shaft ten feet in depth and ten by six, well timbered, reaching the lode at a depth of 42 feet. The ore on or near the surface yields a large per cent. of copper, but at 40 feet, proves to be a true and valuable mine of silver ore. The next in order is the Gem lode, discovered last June. This jewel was discovered by Dr. Ford, formerly of Nevada City. A shaft of 43 feet developes a crevice of nine or ten feet with four feet of exceedingly rich silver ore. Indeed, the doctor is sanguine of $300,000, as it is in sight. The Copperhead No. 2 is also a promising vein, but little work has yet been done upon it. The Mountain Spring is also another promising vein. These lodes are well situated for wood, water and convenience for working, and must, at an early day, attract the attention of capitalists. Beside these, there are many other lodes of equal value which we shall call your attention to at an early day hereafter. This is one of the oldest camps of the mountains. The miners here are confident and sanguine of success, and they deserve it. They have battled hard and long for the boon of wealth; come it must and come it will, if energy and industry will avail them.....A correspondent of the *Independent* writes from Bitter Root Valley, April 1, that quite an excitement is prevailing there in regard to the newly discovered quartz lodes on Eight Mile creek. "I have seen and prospected some of the rock from the White Cloud," he writes, "and am perfectly satisfied with the result. A shaft has been sunk to the depth of fifty feet, and I believe they have not yet found the width of the crevice. The gold is plainly discernible, and shows a uniform regularity throughout the rock. All kinds of report

are circulated here about new discoveries of placer diggings somewhere in the vicinity of Ross's Hole, at the head of the Bitter Root. A number of men have gone to find out the truth of the affair. I also hear of more discoveries of silver lodes on the Burnt Fork of the Bitter Root. The reports represent these lodes as both extensive and rich. The farmers are prepared to carry on their business extensively in all parts of the valley. Improvements are going on, slow but sure, each one adding as his means will permit to the comfort of his home, defying grasshoppers and the vague reports of coming Indian troubles. Produce of all kinds commands a good round price. A petition has been circulated, setting forth to the Secretary of the Interior the propriety of settling the Indians upon some other reservation, so as to ensure the permanent settlement of the valley by whites. Stock of all kinds command the highest cash price—beef cattle, per head, $90; work oxen, per yoke, from $180 to $200 . . . A letter from Missoula county, in the same paper, says that things never looked more flattering in that portion of Montana than at present. "Several small parties have left for Libby creek and the Yack, and many others will follow. Parties of five or six are leaving here almost daily, the larger part of whom are determined to re-prospect the country visited by them last summer. The quartz excitement still rages in Bitter Root. There is not a finer field for the prospector to operate in than Missoula county, for the reason that little or no prospecting has been done."

Nevada.

The San Francisco *Commercial Herald* says: Returns of bullion from Nevada for March foot up to the handsome amount of $1,019,000 in round numbers. Of this sum $771,000 was received from Storey county; from Austin we received $203,000; and Oreana and other points in Humboldt sent us $35,000. Considering the almost impassable condition of the roads, the above is a very gratifying exhibit of the wealth which the mines of Nevada are capable of supplying. With the return of fine weather and improved traveling, the gold and silver stream will undoubtedly be quickened and enlarged. The miners will also have a far better opportunity to unearth and develop the treasures of their various claims, work in many having been retarded by the severity of the past winter. Prospects for the present year are more encouraging, and mines will be worked which last year were suffered to lie idle. Renewed vigor and activity must ensue upon the enlarged and lucrative field of operations resolved upon, and some of which are already commenced. We call attention to the annexed tabular statement. It will be noticed that in some respects it is incomplete, as, for instance, the product of the Yellow Jacket company was given last year, while for the present year we are without the figures, having been unable to procure them. The bullion yield of the Gould & Curry mine has been small within the period under review. Otherwise the statement of bullion is, in the main, correct:

COMPANY.	JANUARY. Highest Price.	Lowest Price.	Bullion.	Assessment.	Dividend.	FEBRUARY. Highest Price.	Lowest Price.	Bullion.	Assessment.	Dividend.	MARCH. Highest Price.	Lowest Price.	Bullion.	Assessment.	Dividend.
Alpha	$50 00	$37 50				$78 50	$50 00				$62 50	$100 00			
Belcher	190 00	128 00				360 00	187 50				425 00	255 00			
Bullion	45 00	30 00				70 00	32 00				131 00	47 50		$26,000	
Crown Point	1,900 00	665 00	$54,249			1,900 00	1,100 00	$37,248			2,450 00	1,625 00	$85,663	25,000	
Confidence	57 50	50 00				80 00	52 50				269 00	168 00	34,798		
Chollar-Potosi	265 00	138 00	45,682			225 00	172 00	30,527			97 00	22 00		15,600	
Daney	15 00	8 00				16 00	6 00				93 50	31 00			
Exchequer	23 00	12 00		$24,000		44 00	24 00				280 00	250 00	16,627		
Empire M. & M. Co.	187 50	162 50	16,050			275 00	195 00	16,601			690 00	560 00		10,000	
Gould & Curry	475 00	335 00				850 00	410 00				125 00	85 00	8,166		
Gold Hill Q. M. & M. Co.	97 50	75 00	6,538			100 00	90 00	5,000			2,900 00	2,350 00	90,000		
Hale & Norcross	3,765 00	1,260 00	43,863			7,100 00	2,700 00	5,418			272 50	285 00	73,655		
Imperial	208 00	152 50		22,500	30,000	283 00	196 00	63,028		$30,000	450 00	267 50	68,898		$10,000
Justice and Independent	900 00	249 00	92,914			310 00	257 50	69,526			240 00	19 00	20,000		
Kentuck				50,400		190 00	55 00				210 00	147 00			
Lady Bryan	78 00	55 06		48,000		75 00	20 00				205 00	144 00	55,937		
Ophir	115 00	68 00				240 00	70 00	22,328			23 00	12 00			80,000
Overman	10 00	8 00				25 00	7 00				184 00	145 00	227,950		
Segregated Belcher	152 00	107 50	151,400		80,000	200 00	135 00	181,657			81 00	10 00		30,000	
Savage	30 00	11 50		150,000	12	22 50	7 50				1,555 00	1,130 00	73,655		
Sierra Nevada	790 00	666 00			22,200	1,325 00	735 00	47,120		22,200	325 00	300 00	52,570		
Amador, (Cal.)			42,989		60,000	300 00	225 00								
Total in 1868			$454,005	$294,900	$132,200			$478,453	$184,000	$132,200			$734,267	$76,600	$90,000
Total in 1867			971,791	110,300	284,000			934,530	76,000	256,000			663,429	44,480	250,000
Total in 1866			671,535	62,000	60,000			603,161	299,000				817,177	113,600	80,000

. . . . . The bullion receipt of the Chollar Potosi mine in March amounted to $4,271 more than in February, and $10,884 less than in January. In the first quarter of 1867 the bullion product amounted to $266,000 against $111,000 the present year. . . . . The Imperial receipts of bullion in March are $10,627 in excess of February, and $29 772 in excess of January, showing a total product in the past three months of $180,566 against $322,581 same time in 1867, and $204,989 same time in 1866. . . . . The increased yield of Crown Point bullion in March as against February amounts to $48,415, and $81,414 in excess of January. . . . The Lady Bryan company is reported to have opened a body of ore in the old tunnel, 150 feet below the surface, some sixty feet wide, and that it averages by assay $36 per ton. A drift has been carried north some fifteen feet, and the ore from it is said to average $45. The croppings, upon which they are at work, are said to improve, with little waste. They have employed additional mills, and are now able to reduce 100 tons per day, the expenses for mining and milling amounting to $13 75, leaving a profit, on say $25 ore, of $11 25, equal to $1,100 per day. Recent clean-ups show a yield of $28 77 per ton. . . . . At the Savage, from 6,307 tons of ore reduced in March, a yield of $227,053 24 in bullion was obtained, equal to $36 per ton. The usual dividend of $5 is due on the 15th, after paying which a surplus of $62,000 will remain in the treasury. Comparing the bullion product of the past quarter of 1868 with the same period in 1867, we find an excess of about $50,000 in favor of the latter period. . . . . The 65 per cent. assay value of 2,847½ tons of ore reduced by the Hale & Norcross company in March, gives a yield of $96,109 82, but the actual product will not come up to this amount, the ore averaging probably about $32, whereas the 65 per cent. requires $33 75 to the ton. The actual bullion yield for the past three months amounted to about $95,000 against nearly $300,000 same time in 1867.

Colorado.

The Georgetown Silver Smelting Company publish the following circular, dated April 27:

The Company are prepared to buy ore at the following prices: All ore containing 30 per cent. and upwards of galena, and not more than 10 per cent. of gangue or rock, or five per cent. of zinc-blende, worth:

100 to 125	ounces	per ton silver,	45	per cent. of assay.
125 to 150	do.	do.	55	do.
150 to 180	do.	do.	60	do.
180 to 200	do.	do.	70	do.
200 to 250	do.	do.	75	do.
250 to 300	do.	do.	80	do.
300 to 400	do.	do.	82½	do.
400 to 500	do.	do.	87½	do.
500 to 600	do.	do.	92½	do.
600 to 800	do.	do.	95	do.
800 and upwards		do.	100	do.

Ore containing over 5 and under 15 per cent. of zinc-blende, subject to a reduction of 2½ per cent. for loss. Ore containing over 15 per cent. zinc-blende, subject to 5 per cent. reduction for loss. Ore containing no galena, reduction $15 per ton for ore worth less than 200 ounces, and $25 per ton worth over 200 ounces. Payments to be made in currency, and liberal cash advances will be made on delivery of ores. The Company reserve the right to adjust this scale according to the supply of ores. A full and continuous supply will secure a prompt advancement.

J. T. HERRICK, Agent.

We take the following items of news from the Georgetown *Miner* of the 30th ult.: We were shown a button of silver yesterday weighing 52.5 oz., taken from 150 pounds of ore from the Munsell lode in this district, being $956.11 per ton coin value. The button was run by Mr. J. O. Stewart at his test and assay furnace in Lower Georgetown. . . . . Messrs. Burlingame and Moor made and assay, a few days since, of some selected ores from the Nuckoll's lode, which gave the remarkably large yield of 218 oz. 12 dwts., coin value $4,184 18 in silver, to the ton of ore . . . The owners of the Terrible lode are building a wagon road from Brownville to their shaft . . . . . T. Griffith let a contract for sinking a shaft on the Griffith lode, on Tuesday last. . . . It is currently reported in private letters from the East, that a company has been organized for the purpose of erecting reduction works here, of twenty tons capacity a day. The parties will arrive here about the 1st of June, when the erection of the works will be commenced. . . . . The Central *Herald* says: Mr. Fitzpatrick is refitting his mill with 12 iron-stem stamps of some 750 pounds weight each. . . . . The Black Hawk Company have accumulated quite an amount of trailings since starting up their 60 stamper, some of which are exceedingly rich. . . . . The lessees of the Covenhoven claim, Bates' lode, have struck a vein of ore in this claim which puzzles our mill-men considerably. Last week Messrs. Moore and Myres ran a portion of the Wilson mill on ore for these parties, which yielded some thirty ounces, bullion, silver being predominant. The bullion was shipped to the Philadelphia mint, by Mr. Cowenhoven . . . . . The Black Hawk Company have a strong force of hands at work on their Gregory claims, 1, 2, and 3, placing their mine-pump in position. When completed, it is expected that it will drain the entire lode. They have already commenced hoisting material from claim No. 1, and also have made quite an improvement in their shaking-tables. Instead of the tables working upon rollers, as has been the case heretofore, they have torn out the first set of rollers, and in their stead have attached bog-chain braces. Mr. Smith, the engineer, claims that they now can be run with one-half the power that it required before. The Company are running 80 stamps on custom ore . . . . . From a friend just over from Ward distridt, Boulder county, we learn that mining matters in that vicinity are livening up. The Ni-Wot Company are rnuning their mill steadily on ore from the Columbia lode. Messrs. Haswell and Henry have their stamp mill running in the best of order for the reduction of an unlimited supply of ore. There are a vast number of men coming in from the plains, whose intention it is to develop the mineral resources of this district . . . There are 172 stamps in motion at Black Hawk, as follows: Holbrook water-mill, 8 stamps; University G. M. Co.'s steam-mill, 15 stamps; Miller's water-mill, 12 stamps; Nolman, steam, 12 stamps; Empire, steam, 18 stamps; Black Hawk, steam, 60 stamps; Peregrines, water, 12 stamps; New York mill, water, 35 stamps. Nevada district turnishes a great portion of the ore for the mills of Black Hawk. We anticipate a good season for mill men . . . . . The gold shipments for this week are comparatively light to what they have been for the past few months. Warren Hussey & Co. ship 340 ounces gold, or $7,200 currency valuation. This amount was purchased mostly in small lots. The Rocky Mountain National Bank ship $6,000 currency, Geo. T. Clark & Co. ship $7,000. . . . . The Smith & Parmlee mine on the Gregory Extension is now hoisting ore. . . . . Gregory mill No. 1 is running 10 stamps on ore for Mr. Brastow, lessee of No. 11 Gregory, and 10 stamps on ore from some lode in Nevada . . . . . The *News* says: An important sale of mining property has been made in Lake county. Mr. Charles W. Lowe, an old and well-known miner, has sold to a Chicago Company claims numbering from three to nineteen, inclusive, in Fairplay gulch, for $15 cash. The claims are good ones, and have been worked by Mr. Lowe for three years past at a profit of $15,000. Most of the work has been performed by himself. We might add that we yesterday saw a six-ounce nugget which had been taken from them. We congratulate Mr. Lowe on his success, and wish the company very large yields from them.

Idaho.

The *Avalanche*, of the 11th ult., says that P. H. Clark has sold out his interest in the Pauper mine, to J. M. McQuaid, for $3,000, and has purchased a controlling interest, 650 feet, in the Mississippi claim, including the Donovan & Thomas, for $5,500. The Mississippi is considered a very promising mine. . . . . A correspondent of the Montana *Post* writes from Leesburg, a plea for the Salmon mines. He says:—I propose to show some reasons why this is an attractive camp for miners. The gold of this basin assays about $18.75 to the ounce. The claims that are being worked range from five to twenty-five dollars per day to the hand. Those that have already been tested have invariably produced these results. The country has been poorly prospected; it may be said to remain as yet in its original condition, there being none of the hills, up to this time, touched, and all the mining thus far having been confined to the beds of the streams and small gulches. The wages paid laborers last season, which will be paid this incoming year, was, and will be, six dollars per diem in good gold dust. And I am credibly informed by a great number of claim holders, whom I know to be in earnest, that a thousand men, in addition to present population, can find speedy and profitable employment here during the coming season. Now, Mr. Editor, is there a single point on this coast that presents to the laboring man so fair a field for the investment of his muscle, as right here in this basin? I answer that a residence of nearly twenty years on the Pacific coast, with abundant opportunities of witnessing the practical results of mining operations, fails to convince me of the existence of superior or even equal merit in any other locality. The first great rush to this basin, I admit, proved disastrous to a great many; but that was not the fault of the mines. The exaggerated statements that had gone abroad, and that led the first emigrants here, had prepared their mines for a different country, both in point of soil and richness in gold. The stories thus published and circulated attracted to this place in the winter of '66 and spring of '67 a large number of adventurers of all trades and professions, all expecting to amass sudden fortunes. Every branch of trade was overdone, the country largely overstocked with goods of all descriptions; the consequence was simply disappointment and loss; then followed a universal condemnation of the mines. The opening of spring also opened the eyes of adventurers and speculators; the melting of the snow brought to light the important fact that the streams and the gulches were not yellow with gold dust, as they had been led to suppose—but was concealed from the eyes of idle curiosity, and that in order to bring the precious stuff to the surface it required work, stubborn, hard work. That did not suit the taste or genius of the first emigration. They departed in hundreds, without ever sticking a pick in the ground, and the stampede became general, until the basin was almost denuded of its population. Those who remained and plied their vocations have made money, beside opening up and putting a face on their claims for the coming year's work. All we want now to make this one of the most prosperous mining camps in this or any of our sister Territories, is laborers, good practical miners, for which they will be paid in good clean gold dust, at the rate of $6 per day. Those who do not want to hire can find plenty of v acant and unprospected ground, with every facility in the way of wood and water for its development. The camp is well supplied with all the necessaries of living, and can be purchased here as cheap as at any mining camp within my knowledge—sufficiently so to enable the miner to live well on $7 per week.

New Mexico.

A correspondent of the Santa Fe *Gazette* writes of a journey to the Moreno mines. His account bears date April 7th, and is quite interesting. It runs thus:

Mounting our horses at Maxwell's ranche, and riding in a westerly direction about six miles, brings us to Laguna Seca or Dry Lake, and about two miles further we strike the Dry Cimarron, which contains plenty of water now, and is lined with cottonwood, but often goes dry in the summer, and hence the name. Riding on briskly we soon come to the Divide or Hill as it is variously styled, and after passing the ridge you soon come to Maxwell's Saw Mill—12 or 14 miles from our starting-point. But now comes the tug of war, for plunging into into the Cimarron and Cimarron Cañon, the former greets you with a stream of water some thirty feet wide, three to four feet deep, and running as swiftly as a mill race, over a rough rocky channel, after splashing through which you are welcomed by the latter with pools of water, rocks of most any size, and plenty of mud. You need not congratulate yourself, on having safely crossed without getting wet, for travelling thus—a la mud—you plunge in and out of the stream until within about three miles of Virginia City, when, after having made thirty-two crossings, you are in a very benevolent humor, and resemble a neophite of Neptune. About half way from the mill to Virginia City, is a view which would delight the heart of a geologist or lover of nature, which is a beautiful specimen of trap rock, rising perpendicular from 100 to 300 feet high, which is called by the miners the Palisades, and which extend almost unbroken for perhaps one half a mile. About three miles before reaching Virginia City you go over the worst hill or divide on the road, after passing which about a mile the Taos trail turns off to the left, and here also is the junction of La Cienegia and Moreno Creek which forms the Cimarron. About two miles further brings us to

VIRGINIA CITY,

if twelve or fifteen houses, one half of which are not yet roofed, can be styled *a city*. This place is laid out on the east side of Moreno Creek, and gently sloping to and about one half a mile from it. The streets (at present under two feet of snow) running east and west are named from the letters of the alphabet, and those running north and south are called by the cardinal numbers. There is one store here, but no hotel, stable, restaurant or barber-shop to greet the weary traveller, but after diligent search you can find some corner to sleep in, while your poor animals stand in two foot snow, with no hay and only a quart or two of bad corn. Mounting our animals in the morning, if they have not frozen to death in the night, riding along up Moreno Creek about a mile, you will notice a road leading off to the right, which goes up into "Willow Gulch," and the one leading off to the left running up a cañon, down which runs Comanche or Two Mile Creek. After having travelled about four miles up the Moreno, you strike Spanish Bar, where, judging from the ditches, sluice boxes, picks, shovels, &c., extensive preparations are being made to take out gold—if they find any. This bar is not like a river bar, as may be imagined by those unacquainted with mining or mining phrases, but it is a sloping hill, caused most likely by a mountain slide, and it is in this slide or bar where gold is supposed to be found. One mile from here brings you to

ELIZABETHTOWN,

situated in a cañon of the mountains on a steep pitch on the west, and but a few steps from Moreno Creek. This place has a decided start of Virginia City, and contains some fifty or sixty houses, some of which are like the Arkansas Traveller's house—roofless, for the weather was to severe to complete them. There is considerable bustle and business air to be seen, and especially should you go into "Arbor's Saloon" you will be convinced that it is a stirring place. There are several stores, two restaurants, and as many saloons, as also a drug store, a billiard table, barber shop, and gambling houses where the miner can deposit all his hard earnings of weeks in a few hours. That house across the street, in which you notice two smiling faces, you would do well to give a wide berth, and you will be richer in pocket, better in berth, and wiser in mind.

GULCHES.

Crossing the Moreno and going almost due east you strike a large gulch known as *Humbug Gulch*, which has the reputation

of being one of the richest yet discovered. Looking off to the left you will see ravines or cañones running into the mountains known as "Mills," "Big Negro" and "Little Negro" gulches. Turning obliquely to the right, and crossing a small ridge, brings you into "Michigan Gulch, and pursuing the same direction you will soon enter "Grouse Gulch," which is considered rich. Riding up this gulch about two miles brings you to its head, and on the summit of the ridge there is located an embryo metropolis of three houses called the "Mountain City." And here lies the "Last Chance Gulch," where last summer, from July to October, the Colorado Co. (five in number) took out $24,000, and a short distance from here the "Arizona Co.," with claims supposed to be as rich as the above, and on the 5th instant took out eleven ounces in a seven hours run. This gold assays about $17, and commands $20 to $22 in greenbacks. Here also heads "Willow Gulch," which comes out about three miles from Virginia City. But should none of these suit you, then pay your money and select from the following: "McElroy Gulch," "New Orleans Flat," "Spring Gulch," "Moskito Gulch," "Neally Gulch," "Limerick Gulch," "Spanish Bar," "Moreno Gulch," "Sardine Gulch," "Grub Gulch," and Dead Broke Gulch."

PRICES.

The retail prices of some of the principal aticles of trade with the miners is as follows: Flour at $10 per hundred, coffee at 65 cts. per lb.. sugar at 45 cts. per lb., bacon at 45 cts. per lb., vinegar at one dollar per pint, lumber at $35 per thousand, beef at 15 cts. per lb., corn at 7 cts. per lb., oats at 6 cts. per lb., hay at 8 cts. per lb., shingles at $10 per thousand, molasses at $5 per gal., picks at $4 a piece, shovels at $4 a piece, pans at $4 a piece, logs at 10 cents per ft. (scored and hewed.) A two-horse team $10 per day.

Dakota.

The Cheyenne *Commercial Record* says:—It seems to be generally admitted by geologists and mineralogists who have examined the Black Hills west of this city, that the rock formation is not favorable to the existence of gold in quantities sufficient to pay. Of course this *dictum* can only be accepted for what it is worth. Gold, at the best, is a most slippery, uncertain customer, liable at any moment to be discovered when least expected. However, the views of the geologists on the rocks of the Black Hills are entitled, in the absence of any proof to the contrary, to considerable weight. They are, doubtless, the result of a patient investigation into the origin and position of the formation, when compared with those beds of metamorphic rock which, in conjunction with granite, have been found almost invariably the distinctive geological feature of rich gold-bearing districts. In the Black Hills we find an almost total absence of these metamorphic shales intersecting the primeval granite. In their stead we have lime and sandstone groups upheaved and convulsed in many places by the irruption of igneous rocks. Large tracts are also covered with a deep drift, or detrius, supposed by many to be of the glacial epoch. These signs on the surface of the earth must be very discouraging to any old miners in search of bed-rock diggings. Indeed, no one experienced miner in twenty would care to stay and waste a day in exploring such a country for the precious metals. The Black Hills, while they were inhabited by hostile and savage Indians, and while it was a work of danger to deviate a few miles from the stage road, were held to be drained by gulches abounding in rich pay dirt. Every one who, at the risk of his life, had succeeded in passing a day or two in the forbidden land, returned to tell of the great treasure that had gladdened his eyes on every side. This was, at the best, a romantic view of what was then a *terra incognita*, but it had become so firmly entwined as part of the creed of the inhabitants of nothern Colorado, that gold existed in large quantities in the Black Hills, that no one could have affirmed his disbelief without almost the certainty of having a quarrel on his hands. Now that the veil of romance has been lifted and the mysteries of the Hills are exposed to the gaze of every one, we find find that, so far as the country has been explored, there is no gold there. Of course this remark don't apply to the main body of the Black Hills, which stretch far to the northeast across Dakota. It is possible, but not probable, that the rock formation during this distance may be found to have changed entirely, and that in places gold will be found in paying quantities. If the great expedition ever starts from Yancton for these parts it will probably have a good opportunity for prospecting the Black Hills in this direction, and we shall be anxious to learn the result of its observations. The chief mineral resources of the Black Hills, near the city, appear to consist in the beds of coal and iron ore, and perhaps veins of copper ore. With the railroad running in such close proximity to these coal and iron fields, we have no doubt that iron will shortly be manufactured there in large quantities. In fact there is reason, with such facilities for work existing, why the Black Hills should not supply an immense extent of the central portion of the continent with that great desideratum for civilization—manufactured iron. The saving of the great expense of bringing this article from the East, ought to leave a large margin of profit to the manufacturer here. If once this business was started near the line of rails, we believe that its growth and importance would astonish the West. Every year the demand for iron increases, and in the territories there would be practically scarcely any limit to the demand, if the article were forthcoming at anything like a moderate price. It is hoped that the Union Pacific R. R. Co. will shortly find it necessary to build iron furnaces and foundries in the Black Hills to supply their work-shops along the line. The project has, we are aware, been already under consideretion in this quarter, and has, we believe, been very favorably reported on. Let them once start such an enterprise and we believe the nucleus of a large and successful branch of industry will have been formed.

California.

Nevada County.—We have news from this county to April 3. A North San Juan correspondent writes that the celebrated Buckeye claims of Evans & Co. paid for the month's (March?) operation $24,750.....The *Transcript* says that the Whiting, Chinn & Co. realized gross about $8,000, on the first run, from their recently completed tunnel.....The claims of Bowen & Morgan, on San Juan Hill proper, realized to the owners, after a three weeks' run, nearly $5,000. The Golden Gate claims, also on San Juan Hill, cleaned up about the same sum.....The New York Hill company, at Grass Valley, have increased the capacity of their mill to twenty stamps, now running. The ore in the mine is looking first-rate.....A French company is engaged in putting up extensive sulphuret works near Canada Hill, where sulphurets will be reduced by a new French process.....The *National* says that the Wisconsin mine is now being worked on the fourth level 300 feet deep, and shows beautifully in free gold and sulphurets.....The Moore & Taylor claim at Gold Run cleaned up lately, after a run of fifteen days, $8,008.....The *Gazette* says:—An immense slide occurred in the claims of Dr. Farnham, at Chalk Bluff, a week or ten days ago, filling up the drain tunnel and causing a suspension for a time of sluicing operations.

San Bernardino County.—Papers of the 28th ult. report miners at work in the placers trying new fields of labor, or improving those already known and thoroughly tested.

Sierra County.—According to the Downieville *Messenger*, March 21, the Johnson ledge, near the Docile, is proving very rich.....The owners of the old New York claim, near Alleghany, recently found a quartz boulder which contained about $1,000 worth of gold.....A small cave which took place in the Docile mine brought to light about $1,500 worth of specimens.....The miners engaged in working on the river are taking out good pay. The prospect is that the present mining season will be a prosperous one.

Calaveras County.—Clark's hydraulic operations at Railroad Flat are especially noteworthy. The *Chronicle*, of April 11, says:—Water is conveyed in an iron pipe a distance of nearly a mile—a fall of two hundred feet being obtained. The power of the water forced through 1¼ inch nozzles, is almost incalculable. Bushes are torn up by the roots, large bowlders washed into the sluices and the tough bedrock cut as if by a knife. Each of the two pipes will throw a solid stream 200 feet. Acres upon acres of the Flat have been washed away, and yet the work has but fairly commenced; one hundred and sixty inches of water are used. Operations in quartz are also being actively pushed forward in that locality. Mr. Said, who purchased the famous "Petticoat lead," has erected steam hoisting works, and has a large number of hands at work in the mine. The shaft has reached the depth of thirty feet, and the rock being taken out will pay at the rate of one hundred dollars per ton. A large number of claims are being successfully worked.....Rich Gulch, like the generality of mining camps at this season of the year, is dull, but the prospects for the future are flattering. Quite a number of gravel claims are being worked and paying well. Work on the quartz leads in that vicinity has not been commenced this spring, but preparations are being made.

Inyo County.—A correspondent of the Esmeralda *Union*, writing from Independence, mentions the Yellow Jacket ledge, yielding fine quartz, working $50 to the ton, and says other ledges, apparently as rich as the Yellow Jacket, are coming to light. He continues:—The ledges range from six inches to two feet and a half in thickness, and all well defined. It might be asked why those ledges were not discovered and worked at the time Inyo district was in its prime. The question may be answered by stating that at the time everybody had "silver on the brain," and unless the ore was composed of galena or antimony, they thought it worthless. The Inyo district will be very apt to make a stir this coming season. In Alhambra district, twelve miles south of Independence, Thos. Passmore and some others have discovered placer mines, which being worked with rockers averaged to the hand six dollars per day of six hours. There is quite a stir at the Cerro Gordo mines; a town has been laid out, and all parties interested are preparing for the next summer's work. A. B. Paul says he will commence operations on the Silver Sprout company's mine as soon as the weather will permit.....Dr. Delevan writes from Cerro Gordo to the Virginia *Enterprise*, of April 2d, as follows:—Parties have already arrived in the camp from San Francisco, have secured mines, and are about erecting furnaces. Those who have thus become interested in the mines of the country are men of much experience in smelting silver ores. They will erect large and lasting furnaces. The clumsy little furnaces become so burned out after running twelve hours that it is necessary to allow them to cool off in order to repair them. The Doctor says a large amount of silver will be taken out of the mines in this vicinity during the coming summer.....A correspondent writes to the Nevada *Gazette*, of April 6th, from Cerro Gordo, as follows:—The mines of this district are principally silver, and, in most cases, very rich, when compared with mines of other camps in this region of country. The ore from some assays as high as $2,000 a ton, many of them averaging from $500 to $700 a ton; but, of course, there are others which are far inferior.

Virginia.

The San Francisco *Mining Press* says:—We have been permitted to make the following extracts from a letter recently received by Prof. Rowlandson, of this city, from Prof. Chas. J. Richardson, Superintendent of the Vaucluse mine, near Fredericksburg, Virginia: "We are not yet quite ready to start our stamps, etc. * * * The following is the result of a lot of average ores, worked by Messrs. Secor, Swan & West's machines; first lot of 300 pounds of green slate and quartz ore, from our main lode, being an average sample, gave—gold, $13.75; silver, $3.25=$17 per ton. The silver was obtained by chloridizing the tailings after they had been run through the amalgamator. The ore was partially calcined, ground dry, and run through a sixty-mesh screen. Second lot, 300 pounds from a level (east lode) forty feet below grass, not calcined, above the average yield, yielded, gold, $6.38; silver, $7.50=$13.78 per ton. Third lot, concentrated ore from entire bulk of vein (east lode) taken from the blankets—no mercury used—yielded $19.25 per ton of concentrated stuff, being about six per cent. of the entire mass, to about $1.15 per ton of ore as it came from the mine. No effort was made to save the very fine float gold, the object being to ascertain what gold could be saved by blankets alone, without quicksilver or copper plates, etc. The ore was much decomposed." It is estimated that about 100,000 tons of this ore can be delivered from the stopes to the mill, during the year, at a cost of fifty cents per ton for mining and hauling over tram way from adit level. It is proposed to crush it with a head of seventy-five stamps. It is calculated that a yield of $2 per ton will more than cover expenses. An English company worked this mine in 1852–3 and '4 at a reported cost of less than seventy-five cents per ton for mining and milling. The same company mined and worked rock from a level forty-two feet below the adit, in hard rock, at a cost of $250 per ton. The correspondent above alluded to continues: "Messrs. Secor, Swan & West are the proprietors of the Manhattan Reduction Works, New York City. Mr. Secor has had the management of similar works in California. Mr. Swan is connected with the Mexican mines, and Mr. West is a practical Swansea smelter. They claim no new inventions, but they do engage to extract within one dollar per ton of the fire assay on gold and silver in ordinary ores. Their process is certainly simple, and, as far as I know, not expensive. The ore, after being finely pulverized, is placed in a cast iron boiler or egg-ended cylinder, holding two tons of ore. A steam pipe connects this with the mill boiler. In this cylinder are revolving arms (agitators) with a sufficient charge of mercury, say 200 pounds; the steam of course keeps the water boiling; they run it for four hours, and then discharge into a washing tank with revolving arms; the mercury that comes off with the discharge of the stuff settles in this tank. Six charges, of two tons each, are made per day; and if the ore is rich, the amalgam is then tapped, strained and distilled. They have smaller machines for testing samples. All ores sent them for trial have a fire assay test made from the same stuff as that which goes into the amalgamator—to show that they are correct in their statements. They claim, as the only novelty in the process, to use a simple, cheap chemical compound, that decomposes the sulphurets, produces a sulphate, interrupts the amalgamating action of the mercury, and produces uniform results. The entire cost of an apparatus, such as I have here described—with the *secret* of the chemical agent—is $3,000. It is guaranteed to do the work, and at a cost not exceeding $4 per ton. Now, if I had one of these machines running in my mill, I would give you an opinion of their merits; but as I have not, and probably may never have, I shall not venture to give such an opinion."

Arizona.

The *Miner* of the 21st ult., describes a trip to Big Bug district, and tells of the times therein, saying: "The tunnel on the Eugenie lode was run in about 150 feet on the vein, which in no one place is less than six feet wide. The amount of rock taken out of this tunnel is immense, and if it pays fifteen or twenty dollars to the ton, we consider it the biggest thing in the mountains. In some places the Eugenie is over ten feet wide, all solid quartz and sulphurets. We next visited the Galena mine, and were lowered sixty feet into the 100 feet shaft. At the depth of sixty feet, a drift is run in upon the ledge a distance of about twenty feet, and we were more surprised than ever at beholding a solid, well-defined ledge of quartz and sulphurets, six feet in thickness, with nice smooth case-walls of talcose slate. The sulphurets in this mine resemble those found in the Sterling lode, and small lots of them, worked in San Francisco, have yielded from three to four hundred dollars to the ton. There are three shafts upon this mine. For richness of its rock, evenness in width of vein, and perpendicularity and beauty of case-walls, the Galena lode beats anything we have seen in a long time. We stayed over night at the mill of Gray & Co. Mr. Gray informed us that until he could find a competent mill-man to take charge of and run his mill, he would not again start it to running. The same paper says of mining in Hassayampa district: The shaft on the Chase lode is now down seventy-five feet. The vein is six feet wide and the rock is very rich.....Frank Alters and F. Hammond have been engaged in sluicing decomposed matter out of the Chloride lode. In one day's run they took out $27.....The Colorado company are doing well—making fair wages. Jim Anderson, Tom McWilliams and Chris. Bentle are working a bar on the creek below Kirkland's arastras. The bar was ground-sluiced by the winter floods, which left about three feet of dirt on it, that pays from top to bottom, about three cents to the pan.....The English gulch, near Prescott, continues to pay fair wages.".....At Walker's district two or three water-wheels are now running, and considerable rock is being crushed. Up to the time of the latest news from there, none of the companies had made a clean up; consequently, we cannot inform our readers how much money the miners are making. Alfred Shupp, who came to town during the early part of the week, told us that all the arastra men were crushing good rock. The placer miners are making six and eight dollars a day.....At Lower Lynx creek Little & Taylor are piping away.....At Wickenburg Manhasseh & Griffin, who arrrived here from Wickenburg on Thursday evening, have told us that both mills were grinding away night and day. The Wickenburg five-stamp mill was clearing about $1,000 per week.

Oregon.

Reports from the New Shasta mines, according to the Walla Walla *Statesman*, March 28, are favorable. It says: "Some two hundred men wintered in the mines, and, rumor has it, took out a large amount of treasure. An old miner assures us that the district will afford profitable employment for ten thousand men. A large number of Walla-Wallains have already left for the new diggings, and we hear of still larger numbers who are preparing to follow." A correspondent of the same paper indulges in quite a different strain. He says: "Coming down to stern reality, and looking facts in the face, the country is spotted, and good claims are few and far between. There are some rich, very rich claims here, that will probably pay thousands of dollars the coming season; but there are a thousand poor claims here—claims that will not pay one thousand cents clear of expenses, to one to the contrary. I have seen no one here yet willing to venture an opinion for or against. They are all doubtful, even those who are called the 'lucky fellows.' In my opinion, this place is but a repetition of Big Bend and Lemhi; and will cause as much disappointment and broken men as either of those two places."

British Columbia.

We have news from the Cariboo mines to the 12th of March. The *British Columbian*, on the authority of Mr. Wiel, "one of the most extensive merchants of Cariboo," publishes the following: "The weather had been spring-like, and very pleasant for three weeks immediately preceding the 12th, and work was being successfully carried on in most of the claims on Williams Creek. The Cariboo, especially, was paying well; one shaft alone yielded 143 ozs. for the week. The other and richer shaft was not being worked, a cave having occurred in it. The Lillooet paid $1,000 for the week. There are about 200 persons out prospecting in the Willow and Mosquito direction, and much excitement prevails. Several gulches and small streams have been discovered in that promising district, and in some instances good prospects have been struck. From Mosquito Gulch the news is good; for the week ending the 8th, the Minnehaha yielded 324 ozs. to one pick? Mr. Wiel showed us one piece worth $90, taken from this claim. The new tunnel, being opened by contract in order to tap the lead lower down, was in a distance of 200 feet. The Willow claim on Red Gulch continued to pay as richly as ever, while the Discovery claim paid $50 to the share for the week. Good pay has been struck in an adloining claim. On Wilson Creek, about two miles from Mosquito, excellent prospects had been obtained. The Creek, it is thought, promises to be as rich as Mosquito, Island Gulch, Whip-saw Gulch, and others not known to fame, were reported to be prospecting well. The Island Quartz Mining Company (limited) had go their tunnel in a distance of 135 feet, much of which is through the solid sock, and they are considered to be within five feet of the lead. This quartz lead is believed to be very promising.

Canada.

The Madoc correspondent of the Toronto *Monetary Times* writes under date, May 5, that mining operations are, on the whole, quiet. "There has been no new sensation during the week, and the croakers are ascendant. The chief object of their present animadversions is the Richardson mine. The machinery ran, with some trifling interruption, during the whole of last week, and some fifty tons of miscellaneous rock was put through. On Saturday the mill was stopped for the purpose of examining the amalgam, when, finding that the mercury was still capable of taking up a good deal more gold, the manager decided to go on until fifty tons more shall have been reduced. Three and a half tons of ore from the Toronto and Whitby company's mine, are reported to have yielded gold to the amount of $84, or $24 per ton. This was reduced at Wallace's mill, late Turley & Gilbert's."

Nicaragua.

A correspondent of the San Francisco *Times* says that in the official statistics recently published by the government of Nicaragua, the mining district of Chontales appears with only $90,478 45 of exportation. "But (he remarks) we ought to remember that we are just commencing to explore our mines, a large amount of machinery is arriving by nearly every steamer from the States or San Francisco, and we can justly believe that our next quarter will show as large an amount as the above annual. In fact the astounding news about the richness of the recently-discovered gold and silver mines in Jicaro, New Segovia, are such as to lead us to expect much larger results."

COPPER.

Michigan.

We have news from the Portage Lake district to the 7th inst. The *Gazette* publishes the following products for April: Hoar & Brothers—Stamps, 20 tons, 1,049 lbs. Quincy mine—Stamps,

67 tons, 1,045 lbs.; Mass, 12 tons, 1,696 lbs.; Total, 70 tons, 741 lbs. Hancock mine—Barrel 3 tons, 1,750 lbs.; Stamps, 28 tons, 1,198 lbs.; Total, 32 tons, 948 lbs. Evergreen Bluff mine—Mass, 7 tons, 1,790 lbs.; Barrel, 7 tons. 1,810 lbs.; Stamps, 8 tons, 870 lbs.; Total, 24 tons, 470 lbs. Isle Royale—Barrel, 3 tons, 787 lbs.; Stamp work, 9 tons, 1,538 lbs.; Tribute, 734 lbs.; Total, 13 tons, 1,059 lbs. Pewabic—Masses, 3 tons, 1,350 lbs.; Barrel, 12 tons, 1,070 lbs.; Stamps, 43 tons, 823 lbs.: Total, 60 tons, 203 lbs. Franklin—Stamp, barrel and mass, 92 tons, 710 lbs. Huron—Masses, 580 lbs.; Barrel work, 21 tons. 612 lbs.; Stamps, 38 tons, 680 lbs.; Total 60 tons, 872 lbs. Huron (for March,)—15 tons, 827 lbs. It is again reported that there are movements on foot looking to a consolidation of the Shelden, Columbian, and Grand Portage properties.....The Huron mine, with a total force not exceeding 175 men, returns a product of sixty tons for April. As near as we can learn the cost will not exceed $12,000.....We condense from the same paper of the 30th ult., the following items of news: In sinking the new Red Jacket shaft through the drift to solid rock, a large boulder of conglomerate, rich in copper, has been found .....The Isle Royale strikers, except a few ringleaders who were discharged, have resumed work.....The Evergreen Bluff product for March should have been reported eighteen tons 770 lbs.....At a meeting of the Portage Lake creditors of the Bay State, it was decided that the attachment could not be raised until the claims against the company are met, it appearing that the money is in the treasurer's hands, but an extension of time is asked for payment.... They have been busy hoisting copper out of the central mine for the past week or two, and will be for some time longer. We have heard the quantity that was on hand variously estimated at from 200 to 400 tons of splendid mass copper. The largest of five masses that were hoisted one day last week is called ten tons. We don't remember ever seeing a prettier mass.....At the Amygdaloid the vein in the sixty feet drift, north of the north shaft, is two feet wide, and a very good stamp vein. The drift south is idle. The stopes in the back of the sixty are looking very well, the vein is from four to five feet wide. Three masses were taken out of this run that weighed two and a half tons. The new vein is not looking as well as usual. There is a good pile of stamp rock on hand, apparently rich rock, which will be crushed soon.....At the Phœnix mine, in the adit level south of B shaft, the ash-bed has been reached. It came to hand almost to order, and it carries considerable copper, the vein showing better than it has for some time past. It would not be unreasonable to expect something really good here, as the belts of rock next to be driven through are those in which the Copper Falls deposit was discovered. In the Bay State vein the prospects are cheering, fourteen feet having been drifted by the side of a mass of copper. The Robins vein also never looked better.....The Hecla mill started again on Friday last, and so far as we have heard, ran well until yesterday noon when the cylinder-head and bumper-bonnet broke into fragments. Three months have passed and it has probably accomplished, altogether, eighteen full days work. To-morrow the mill passes into the hands of the new management.....A correspondent writes from Copper Harbor that there is a two ton mass in the 30 level north of the Aetna. It occurs in the side of the vein. It is not probable, however, that the shipments from Copper Harbor this year will exceed those of last. The Aetna is employing only eight men. The Vulcan shaft is stopped. The vein, in sinking, showed fairly for stamp copper. Operations have been suspended until somebody comes up from Philadelphia, or sends up, to say whether a horse whim or steam engine will be required to carry on further work. .....Another correspondent writes: The Garden City mine is again going to take out copper. There is nothing strange in hearing that the mine is rich, it being so continuously. Report reaches us now that there is a great improvement in the ash-bed in the bottom drift going east, "chunks of copper as big as a powder-keg" being taken out. The resources of the vein are also to be drawn on for a summer's product. The stamp mill is to be started immediately.....A friend has compiled and sends the following comparative yield per fathom of ground broken as per reports for 1867:

	Mineral lbs.	Mineral per cent.	Ingot. lbs.
Central.....	643	79.39	510
Quincy.....	646	81.46	526
Copper Falls,—ash-bed.....	394	70.93	300
" Owl creek vein.	1487	70.93	1054

..... The Ontonagon *Miner* says: The national produced last month over twenty-four tonns of copper, which indicate that the mine still produces well for the number of men employed, and that although the yield has been heavy during the winter, the prospects are good for this season. The veins grow richer as depth is attained. The stamps received material and important improvements, and commenced work on the morning of the 16th. The capacity of the mill allows of stamping twelve hundred tons of rock per month, yialding from twelve to fourteen tons of copper. The improvements made during the winter dispense with the services of four men and boys. Where, formerly, seven were required in the wash-house, but three are needed now. One of the principal improvements was the construction of a wheel, by means of which, the rock after once passing through the jiggers, is carrried back again without manual labor. This, of itself, dispenses with the labor of two boys. Capt. Chynoweth's idea, in this respect, is a good one, and might, with profit, be adopted by other companies. Rock yielding one-half of one per cent. can now be passed through the mill at a profit. As the present force now employed underground are unable to keep the mill at work, it is proposed to continue stamping the burrows. It will be remembered that the rock stamped last fall yielded 86-100 per cent. If this rock gives an equal per centage, a good profit will accrue to the company. The late boiler explosion does not affect the working of the stamp mill, only, if it were necessary to saw up timber, it would have to be done while the stamps were idle, as the two boilers now in use are not of sufficient capacity to run both stamps and sawmill. It is proposed to repair the boiler and replace it as soon as possible.....At the Mass the tributors have produced fourteen tons of copper. This, our readers must remember, is the result of three men's labor labor since since 1st day of December, 1867. Why do not the directors and stockholders of this little mine resolve to prosecute work? It would pay. No argument could be adduced to prove this which would be more strong than that three men can show fourteen tons of mass copper as the result of less than six months labor.

COAL AND IRON.

Pennsylvania.

The Philadelphia *Public Ledger* says:—An arrangement of much importance to the coal, iron and lumber interests of this State, has been consummated between the several canal lines on the Susquehanna river and its branches, embracing the Wyoming canal, the West Branch and Susquehanna, the Pennsylvania, and the Susquehanna and Tidewater canals. These companies together owning the whole system of canals draining the great interior of the State, and connecting it with tidewater, have entered into a contract which takes effect immediately. By this contract they respectively bind themselves to operate their canals as one line on all through tonnage, to pro-rate all through tolls, and to enlarge all of their canals by the spring of 1871 to six feet depth of water.....The Mahanoy *Gazette*, of the 2d inst., says:—The Mahanoy and Broad Mountain extension of the Philadelphia and Reading railroad, from Waste-House Run to Mahanoy City, upon which workmen have been engaged the past winter and spring, is now approaching completion. The bridge across Main street is nearly finished, so that in a few days the collieries in this neighborhood, shipping by the Reading road, can send their coal via the Plane and Port Carbon, instead of the Tunnel and Port Clinton, making, as we understand, a difference of nineteen cents per ton toll in favor of the shipper.....The Pottsville *Standard* says:—The property of the Susquehanna Coal and Mining company, located at Mt. Carmel, in the Shamokin coal basin, has been sold at private sale to Messrs. Thomas Wilson, George W. Abell and William A. Fisher, for two hundred thousand dollars.....The *Free Press* says.—The Lehigh Coal and Navigation company's canal, from Mauch Chunk to Easton, is in better order than it was ever known to be since the canal first opened. The Delaware division of the canal has also had an overhauling during the past winter. The Lehigh company had three hundred boats built at Chester about two years ago, and only one hundred and fifty of them were running until this season, when Messrs. Sharkey and Huston, of Mauch Chunk, started off one hundred of the remainder, which were lying at Bristol. The object is to get all of the boats of the Lehigh Coal and Navigation company in service during this season. Freights are the same as last year.....The Columbia *Herald* says:—The Reading and Columbia railroad company have two turn tables at their coal schutes in this borough, in which they have erected platform scales, for the purpose of weighing the coal before the car is dumped. These scales are probably the first ever put into a turn-table in this country.

Michigan.

We have news from the Lake Superior iron mines and furnaces to the 39th ult. The Collins furnace has again blown in, and is doing well, with a fair prospect for a long and successful blast. The Jackson furnace, Big Bay de Noc, blew out on the 17th inst. The hearth is badly burned out. Charles H. Lovelace has gone to Menominee to make examinations with a view to build a furnace there.....The stack of the Greenwood Furnace is being rebuilt, and it is probable the furnace will be making iron by the 1st of August. The Champion furnace is again working badly. James M. Gray has been engaged as captain for the Cliffs Mining Company for the coming year. The transportation of pig metal from the Pioneer furnaces to Escanaba, to be ready at the opening of navigation, began last week. These furnaces have about 2,000 tons on hand, which, considering that the two stacks have been out of blast an aggregate of 4½ months during the winter, is a goodly stock. At the New England mine but little mining is being done at this location just now. Capt. Williams is getting some slate ore, but has suspended work entirely in the hematide beds, most of the force being at work on the railroad extension, until the completion of which not much ore will be mined. The company has about 7,000 tons of hematite, mined during the winter, and will commence shipping as soon as the boats begin running from Masquette. Matters at the New England look favorable for a good summer's work, with railroad completed, which will be about the 1st of July. At the Edwards mine everything looks exceedingly well, and speaks volumes in praise of its superintendent. In two weeks, or by the time shipments commence, it will be prepared to answer drafts of 200 tons a day—the amount intended to be sent from there during the shipping season. Captain Mitchell places the quantity of ore in stock at about 7,000 tons.

Canada.

A new mining association has been organized at Quebec to develope valuable mining grounds on the river Betsiamites. They hope to be in operation early this summer....The Quebec papers say that the steamer *Margaretta Stevenson*, Captain Hammond, arrived Thusday last at the Old Capital from the Mosaic river, with many passengers and a cargo of iron and ore. They say that the American Navy Department purchased 300 tons at $116 per ton, which would tend to prove that the working of that deposit will be highly remunerative. More than 500 persons wintered there. The little colony, with less than one year's existence, flourishes quite encouragingly. It has a church and priest, a hotel and about thirty dwellings.

Oregon.

According to the Salem *Record*, over six thousand tons of coal were shipped from Coos Bay to San Francisco during the year 1867. "Mining will be carried on more extensively during the present year. Two coal banks are in successful operation; so much so that nine vessels were loading at one time for San Francisco. A new mine is being opened on the Coquille. Fine coal banks exist there, and will be a source of great profit. The country is fast settling up, and promises to be a valuable portion of our State."

MISCELLANEOUS.

Tennessee.

The report of the Department of Agriculture for the month of March has the following sketch of the industrial capabilities of Tennessee:—The mineral resources of Tennessee are developed to but a limited extent, though her hills and mountains contain stores of iron, of coal, and of copper, of zinc, of sandstone, and of the finest marble, awaiting the capital, enterprise, and labor that shall dig out and utilize these dormant mines of wealth. Iron ore is found in great abundance in nearly all the counties of eastern and middle Tennessee; copper, in Greene, Sevier, Polk, Perry, and other counties; coal, in the mountains of Campbell, Rhea, Marion, etc.; some gold is reported in Polk; salts, in Greene and Hawkins; lead, in Perry; fine marble and building stones, in Hawkins, Campbell, Monroe, Meigs, Giles, and Williamson; thick stratum of shale in Coffee, etc., etc. The timber resources are also extensive, embracing a great variety, and many of the finest quality of forest trees—hickory, the various oaks, poplar, walnut, ash, beech, chestnut, locust, cedar, sugar, pine, etc., which cover a large portion of the vast tracts classed as "wild or unimproved lands," and to be purchased at the figures named above for such. The soil ranges from that of the deep rich bottoms, of exhaustless fertility, to light and hilly uplands, which require high culture to become productive. In a number of counties the iron interest has been partially developed. In Greene one furnace is in operation, and a Northern company have purchased several thousand acres of ore-lands, and will soon have extensive works completed. Near the town of Greenville there is a bed of sulphate of iron, from which copperas was made during the war, and where even the clay is impregnated with the mineral. Our Montgomery correspondent says that "within twenty-five miles of Clarksville there are from ten to twenty furnaces lying idle for want of capital; most of them were burned during the war, and the proprietors, being unable to rebuild and run them, would sell out very low." The zinc of Greene county is said to be very rich; during the war Epsom salts were also made to some extent in the mountains. In Hawkins, our correspondent states, "there is an underground stream of salt water traversing the valley, which has been tapped at several points, at one of which the manufacture of salt has been successfully prosecuted for a number of years, though not upon a large scale; but it is thought that, with capital and enterprise, it might be made to rival the salt-wells of southwestern Virginia in the production of this valuable product. A most beautiful quality of marble is found at various points in this county, one quarry of which was worked to a considerable extent before the war. Much capital might be profitably invested and many laborers usefully employed in the manufacture and preparation for market of the two articles named—salt and marble—as well as iron, the ore of which is present in the mountains." Our Marion correspondent says "the quantity of bituminous and semi-bituminous coal and iron ore in this county is unlimited, with but little development of the former and none of the latter, though the inducements are great, produce being abundant, and transportation good and improving."

California.

We take the following item from the Stockton *Independent* of April 4th: Black oxide of manganese has recently been found in great quantity in a mine on the coast range of mountains south of Coral Hollow. Several hundred tons are ready for shipment, and parties are now engaged in hauling it to San Joaquin City. A fine specimen of the metal was handed to us last evening by Mr. Rogers, clerk of the steamer Fresno. One side of the sample resembles the brown ferruginous manganese found in Vermont, and which is said to be of inferior quality, while the other side presents specks of a dark, shining crystalline appearance.

Mexico.

The *Constitutionalista* of Morelia, State capital of Michoacan de Ocampo, contains the following letter from a miner who has been residing for a year or more in the neighborhood of Urupan, in that State. The district he describes lies southwest of Morelia:—

URUPAN, March 20, 1868.

The following paper contains such condensed observations on mineral subjects as I have been able to deduce from explorations which I have made during the past year. The places spoken of are either in this immediate neighborhood or in the nearest places of the *Tierra Caliente* warm region near by. In the long range of low hills to the eastward of our city, and which divide the Taretan, I found and explored deposits of iron, silver, copper and gold, each of which deposits have been worked during the last year, and have manifested very rich returns. In the long range of hills between this city and Tancitaro, which is west of us, I have found a valuable lode of gold; also some rich veins of silver, which, to all appearance, are some of the best in our Republic. South of the city, we have the ridges where are found the largest deposits of silver and copper; also, we have here lead of an exceedingly pure and fine quality; again, in the Batea hills we have other lead and copper leads of large dimensions. In all of these places there is a superabundance of water—more than can ever be required for mining purposes. In the neighborhood of Cupuan there is a hill called the Condembaro, where I found rich veins of lead copper and silver. Here I found the opening of two silver mines, which the Jesuits worked on a large scale two centuries and a half ago. The veins of these two mines are wide and deep, and certainly not for want of metal did work on them cease. Two leagues east of Condembaro is the plantation of Estancia, where I found a very old mine, called the Guachinango, where abundance of copper and lead are found in small quantities, and silver veins are very rich. These mines are the oldest in the Republic, and were worked by the Indians long before the conquest. These same mines would yield the most happy results, were work to commence on them again. Years would be required to exhaust them. Between the roads which lead to Santiago, Zacatala, and Tumbiscatio, a tract two and three-fourths of a mile in width, there are forty distinct silver leads or veins. Still further along is one extending from north to south, which is seven feet in width, and produces a copper, silver and gold mixture. Below the Tumbiscatio hills are rich deposits of copper, silver, antimony, zinc and stone coal. All these mines are in a virgin state, except the one on the ranch Terrero, which operatives have been working to advantage for some months. The mine has yielded, on an average, *una marca* of silver, (eight to eight dollars and twenty-five cents in value,) and two *arabas*; fifty pounds of lead to a *corgo*, or to every four hundred pounds of rock. Farther on to the west and the Pacific ocean, I found the Bufa hills, all of which are interspersed with metallic veins. From the Carrizal we discovered one of the most beautiful panoramas of nature, and upon examination we found all that the eager miner could delight in—beautiful climate, fine water, fertile lands which bring forth all the grains, fruits and flowers of all zones. All these, too, are near the Pacific coast. From one of these elevated points in that neighborhood, I can look upon hills and plains that abound in minerals of lead, silver, copper, iron, cinnabar, cobalt and china crystal. Three leagues west of Carrizal is a hill, named Muleto, where we find an old and wide road which evidently was worn through the solid rock, over which it leads, by mules or other animals used to carry the production of some great mine down to the water beyond. The openings of these mines had been closed by those who worked them; but there are the causeways worn through the solid rocks. They stop at the hill sides, and extend only down to the flowing stream below. But I fear to encroach upon your time and columns, and will carry your readers no further into the riches of Urupan district. One thing let me say, and impress it upon your readers, and that is: that in the southeastern portion of Micohacan de Ocampo, are the richest mines of the State, and in my opinion of the Republic. Here are regions of land unparalleled in richness, adapted to the growing of every grain and fruit and flower known to man. Here are vast forests of walnut, mahogany, rosewood and pine. Here is a water power the strength of which is inestimable. The attention of our people and of our government is called to this region. C. M. TORRES, Miner and Engineer."

Mexican Silver Mines.

The State Inspector of Mines for San Luis Potosi, Senor Frago, has lately completed a tour of inspection among the silver mines of his district, and submitted a most encouraging report of the yield and profit of such as are being worked on a scale about proportionate to their extent and value. One mine in the neighborhood of Charcas, worked at an expense of but $169,436, since the first of January, 1862, has yielded silver, during that time, to the value of $5,459,160.

The Santa Rosa Mining Company is drawing out $95,000 worth of ore per week. Its works employ four hundred and sixty hands, at three *reales*, or thirty-seven and a half cents, per day; and the expenses amount, in the aggregate, to about five per cent of the value of the silver taken out. The mines at Zacatecas also yield large returns. Those owned by Davis & Co., who began operations on a capital of $30,000, the total of their available assets at the time of their recent heavy failure, and which their creditors allowed them to retain—will in a few months clear them of their indebtedness of nearly a million dollars. A rich vein of gold, which promises to be profitable, has been struck in the silver mines of Rincan de Romas. The same favorable account is given of other works in active operation.

MARKET REVIEW.

FRIDAY EVENING, May 15, 1868.

Gold and Silver Stocks—A better feeling prevailed in the mining share market, and almost every stock reported on the board list has advanced in price under its influence. Colorado stocks, especially, are stronger, as will be noticed by comparing our quotations of this week with those of last.

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	65	— 90	La Crosse Gold	— 36	40
American Flag	— —	— 50	Liberty Gold	— 2	4
Atlantic and Pacific	— —	— 80	Manhattan Silver	1 10	1 40
Bates & Baxter Gold	— —	— —	Midas Silver	— —	— 65
Benton Gold	— —	— 25	Montana Gold	— 31	— 32
Black Hawk G	5 75	— —	New York	— 58	62
Bobtail Gold	1 05	1 35	New York & Eld'o	— —	— —
Ballion Consolidated	— 40	— —	Nye Gold	— —	— 4
Columbian G. & S.	38 00	60 00	Owyhee Mining	— —	30 00
Combination Silver	— —	— —	Ophir Gold	— —	1 00
Consolidated Gregory	3 00	3 05	People's G. & S. of Cal	— —	— —
Corydon Gold	— 25	— 30	Quartz Hill	— 93	— 98
Edgehill Mining	2 50	3 00	Reynolds Gold	— —	— 3
Gold Hill	4 00	— —	Rocky Mountain Gold	— 10	— 18
Gunnell Gold	— 50	— 85	Smith & Parmelee Gold	2 25	2 35
Gunnell Union	— —	— —	Sensenderfer	— —	10 00
H'n G & S. bs	— —	— 82	Symonds Fork Gold	— —	1 00
Harmon G. & S. bs	— —	— —	Texas Gold	— —	— 10
Holman	— 4	— 10	Twin Riv Sil	— —	70 00
Hope Gold	— —	— —	Burroughs	— 4	— 8
Kipp & Buell Gold	— —	— 15	Empire	— —	— —
Keystone Silver	— 1	— 2	Vanderburg G	— —	— —

Copper Stocks.—Davidson has advanced to 50c., and Rockland is held at $4.

Petroleum Stocks are thus quoted:

	Bid.	Ask'd.		Bid.	Askd'.
Bonnebeff Run	1 00	1 50	N. Y. and Alleghany	....	3 00
Brevoort	40	....	Pit Hole Creek	50	70
Buchanan Farm	42	45	Rathbone Oil Tract Co	....	....
Central	20	60	Rynd Farm	10	17
Clinton Oil	85	....	Sherman & B	....	....
Columbia	....	....	United Pet. Farms	....	....
Manhattan	....	....	United States	1 65	1 80
National	....	2 00	Union	3 50	4 00

Miscellaneous Stocks.—Quicksilver is quoted at 29¼; Cumberland Coal, 35; Wells, Fargo & Co., 22½@23½; Adams, 56½@56½; American, 55½@56; United States, 55¾@56; Merchants' Union, 29½@28½; Pacific Mail, 91½@91⅝; Western Union Telegraph, 38½@38¾; New York Central, 128¼@128⅝; Erie, 68¾@68¾; Hudson River, 136@138; Reading, 90½@90¾.

Government Stocks—United States securities continue firm, although comparatively quiet. Prices are quoted to-day as follows:

U. S. 6s, 1881, coupon	113¾@114
U. S. 5-20s, 1862, coupon	109 @109
U. S. 5-20s, 1864, coupon	107 @107½
U. S. 6s, 1865, coupon	107¼@107½
U. S. 5-20s, July, 1865, coupon	109¾@109¾
U. S. 5-20s, July, 1867, coupon	109¾@109¾
U. S. 10-40s, coupon	103¼@103¾
U. S. 7-30s, June, large	107½@107⅝
U. S. 7-30s, July, large	107⅜@107½

Foreign Exchange is quiet and heavy. There is a fair supply of bills and less exchange is wanted than was expected. Leading drawers have generally reduced their rate for 60 days' sterling to 110½, and at second hand prime names are negotiated with difficulty at 110. The following are the current rates:

London, (prime bankers')60 days'	110 @110¼
London, (prime bankers') sight	110¾@110¾
London, prime commercial	— —
Paris, (bankers') long	5.12½@ —
Paris, (bankers') short	5.10 @ —
Antwerp	5.15 @5.12½
Swiss	5.15 @5.12½
Hamburg (bankers')	36¼@36⅜
Amsterdam (bankers')	41⅛@41⅜
Frankfort (bankers')	41 @41⅜
Bremen (bankers')	79¾@80
Berlin (bankers')	71⅛@72

Gold is quoted to-day at 139½@140.

American silver is selling at 5¾@6½c. below the price of gold. Mexican dollars are quoted at 103¼@103¾ in gold.

Money continues in good supply at the banks, and the brokers supply their wants readily at 6 per cent. In discounting operations there is little doing in prime paper; there is, however, a considerable accumulation of lower grades, which pass slowly.

The following will show the exports of specie from the port of New York for the week ending May 9, 1868:

May 5—Steamer Germania, Hamburg—	
American gold	$933,000
American silver	10,000
Mexican silver	7,600
Foreign silver	1,200
May 5—Steamer Java, Liverpool—	
American gold	535,000
Gold bars	71,000
For Havre—	
American gold	100,000
May 7—Steamer Siberia, Liverpool—	
American gold	75,000
Gold bars	38,900
Silver bars	107,840
May 7—Steamer Columbia, Havana—	
Spanish gold	18,800
May 7—Brig A. Franklin, Porto Rico—	
American silver	25,000
May 7—Steamer City of Boston, Liverpool—	
American gold	690,000
May 7—Steamer Union, Bremen—	
Foreign gold	7,500
Foreign silver	1,200
For Paris—	
Silver bars	55,778
Gold bars	76,133
For Havre—	
Gold bars	18,000
American Gold	277,000
For Southampton—	
Silver bars	80,560
For London—	
Mexican silver	16,637
Silver bars	2,764
Gold bars	162,562
American gold	217,500
May 7—Steamer Bienville, Havana—	
American gold	100,000
May 7—Steamer Louisiana, Liverpool—	
Gold bars	57 500
Total for the week	$3,686,294
Previously reported (corrected)	22,163,509
Total since January 1, 1868	$25,849,903
Same time in 1867	11,161,843
Same time in 1866	8,2?0,711
Same time in 1865	6 693,849

The San Francisco *Bulletin*, in its quarterly review of the trade and commerce of that port says of coin and bullion:

"The amount of treasure exported during the past quarter was $10,540,000, of which $6,900,000 was shipped to New York, $1,243 000 to Asia, and the balance to some half a dozen other markets. The aggregate embraced $5 911,000 Gold Bars, $3,146,000 Silver Bars, $800,000 United States Gold coin, $617,000 Mexican Dollars, and the balance Gold dust and foreign Gold coin. In addition the Sub-Treasurer has shipped to New York on Government account a considerable portion of the $2,000 000 coin duties on imports collected during the quarter. There has also been shipped to Sitka almost $250,000 Gold and Silver coin for account of a Fur Company.

RECEIPTS OF COIN AND BULLION.

"The receipts of Treasure at the port for the past quarter, through the accustomed public channels, aggregate $10,000,000, as follows:

From California and Nevada	$8,954,062
From coastwise ports, north and south, including British Columbia	705,404
Imports foreign	341,?50
Total receipts	$10,000,516
Same quarter in 1867	11,302,836
Decrease in 1868	$1,302,320

"To the above amounts it is customary to add 10 per cent. on interior receipts and 20 per cent. on coastwise receipts to cover sums in hands of private individuals. By observing this rule, the total for the quarter is increased to $11,037,003. The coin remittances to the interior, through Wells, Fargo & Co.'s express, compares as follows with the receipts thence:

Quarter ending March 31.	1867.	1868.
Received from interior	$1,209 830	$1,371,040
Remitted to interior	2 217,018	2,289,408
Added to interior circulation	$1,007.188.	$918,368

"These figures embrace only the coin receipts and remittances through the accustomed public channels.

UNITED STATES BRANCH MINT OPERATIONS.

"The monthly deposits of Gold at the United States Branch Mint in this city for the past quarter compare as follows with 1867:

	1867.	1868.
January, ounces	27,231.57	9,163.04
February	43,678.01	24,177.90
March	67,391.99	26,396.53
Totals	138.403 57	59,717.47

"The receipts this year thus far have fallen off nearly 60 per cent. The coinage at the same institution for the quarter compares as follows:

	1867.	1868.
January	$124,000	$97,000
February	1,022,000	640,000
March	978,535	575,000
Totals	$2,124,535	$1,?12,000

"The aggregate this year shows a decline of about 40 per cent. The Silver coinage for this year, included above, was as follows: January, $17,000; February, $120,000; and March, $60,000—making a total of $197,000. The balance was Gold. The monthly range of Gold Bars has been as follows:

	1867.	1868.
January	840@860	900@910
February	850@870	910@920
March	860@870	910@920

"The supply of Bullion since January 1st has been quite light, and hence the high prices and diminished receipts at the Mint. Silver Bars have ranged from par to ¼ per cent. premium as general quotations."

Copper has been very quiet but firm, at 24 for Detroit and 23¼ for Baltimore. The sales do not amount to more than 300,000 or 400,000 lbs. The Minnesota Co. sold 150,000 lbs. for future delivery at 18¾, gold.

The English market is firm at £77 10 for Chili pig and £86 for best selected.

Tin.—A few days ago 1500 to 2000 slabs Straits were sold at 23⅞ to 24 cts., gold. Banca, 27⅛ cts., nominal. English, 24½.

Spelter, quiet at $6 75, gold, for Silician.

Lead, dull at 6½, gold, for ordinary foreign.

Petroleum—is quiet at 13¾@14c. for crude, and 30c. for refined, in bond.

Receipts for the week ending May 12	pkgs.	19,579
Exports for the week " "	gails.	997,578
do. from Jan. 1st	do.	14,325,589
do. same time last year	do.	16,124,523
Increase		4,201,066

The following is the quantity exported from other ports, Jan. 1 to May 9:

	1868.	1867.
From Boston, gails.	872,594	648,886
" Philadelphia, "	9,057,361	7,073,742
" Baltimore, "	652,517	777,810
" Portland, "	19,072	.....
" New Bedford, "	.....	.....
" Cleveland, "	.....	.....
Total	10,601,574	8,500.433
Total Export from the U. States	25,037,254	18,467,852
Same time 1866		16,776,436
Same time 1869		3,803,160

Gunpowder.—Blasting (B), per keg of 25 lbs., $4; Mining and Shipping (A), $4 50; Kentucky Rifle, $6 50; Meal, $6; Deer, $5 50; Sporting, in 1-lb. canisters, 36c.@$1 per lb.

THE IRON TRADE.

NEW YORK, May 15, 1868.

There is very little doing in the pig iron market. American, No. 1, is very firm at $39@40; Grey Forge is scarce and firmly held at $36; the best brands of Scotch pig are held at $41, from yard, and $40 from vessel; rails are in good demand and prices are firm. We hear of 100 tons steel rails, 56 lb., for the Harlem road, and 500 do. old double-headed, to arrive, on private terms; 100 do. here, $45 50@46; 250 do. American T., $47; 50 do. very superior quality, to arrive, $50; 100 do. Trenton steel-headed, $125; 150 do. old light iron, $36; and 200 do. old horse shoes, $50@52; bar, from store, is more active at old rates.

BOSTON, May 13, 1868.

The market for pig iron remains quite steady with sales of Scotch, Gartsherrie and other brands, at $42@44; and American pig at $40@45 per ton. In bar iron we note moderate sales in lots as wanted.

PHILADELPHIA, May 13, 1868.

Pig iron continues dull and prices are unsettled; sales of Anthracite at $38@39 for No. 1; $36@37 for No. 2; and $33 50@34 per ton for hard. Manufactured iron is firmly held at full prices.

Boston Imports of Pig Iron from January 1 to May 1, 1868.

	1868.	1867.
From Great Britain, tons	1,673	11,380
Coastwise Ports	3,632	2,841

Lehigh Valley Iron Trade.

The following table shows the amount of Pig Iron transported over the Lehigh Valley Railroad for the week ending May 9, 1868, and for the season to that date.

From	Tons.	Total
Carbon Iron Co	120	3,995
Lehigh Valley Iron Co	250	4,620
Thomas Iron Co	495	10,830
Lehigh Crane Iron Co	890	9,540
Allentown Iron Co	385	4,795
Robert Iron Co	130	3,035
Glendon Iron Co	500	9,560
Other shippers	925	5,912
Total	3,695	53,087

Market Prices.

NEW YORK, May 15, 1868.

DUTY.—Bars, 1 to 1¼c. per lb.; railroad, 60c. per 100 lbs.; boiler and plate, 1¼c. per lb.; sheet, band, hoop and scroll, 1¾ to 1¾c. per lb.; pig, $9 per ton; polished sheet, 3c. per lb. Payable in gold.

STORE PRICES.

Anthracite, No. 1, best	$39 00@40 00		Bar, Swedes, ord'y sizes	— —	150 00
" " 2x, fdry	36 00	38 00	Bar, Eng. and Am., r'd	95 00	100 00
" Grey Forge	33 00	36 00	Bar, Eng. & Am., com.	85 00	90 00
Scotch Pig, No. 1	39 00	42 00	Scroll	125 00	170 00
Charcoal, cash	45 00	65 00	Ovals and half round	120 00@150 00	
Old Wrought sc'p, fm yd.	49 00	— —	Band	125 00	— —
" " fm. vsl.	46 00	— —	Horse Shoe	125 00	— —
English rails, gold	52 50	— —	Rods, ⅝@3-16 inch	100 00	160 00
American " at works	75 00	— —	Hoop	133 00	185 00
American Bar Iron.			Nail Rod, per lb	9	10
Common, per ton	80 00	85 00	Sheet, Rus., Mod. Nos.	17	18
Refined, "	90 00	95 00	Sheet, s'gle, D. & T. com	5	7
Old Railroad Iron	46 00@	.....	Rails, Eng., gold, ton	51 50	52 50
			Rails, American	78 00	80 00

STEEL.

English, cast (2d and 1st quality) per lb	18 @23
English Spring (2d and 1st quality)	10 @12½
English Blister (2d and 1st quality)	11½ 20
English Machinery	13¾ 16
English German (2d and 1st quality)	14 16
American Blister, "Black Diamond,"	11½ 17
American, Cast, Tool " "	21 22
American, Spring " "	10 13
American, Machinery " "	— 14
American German " "	10 13

PHILADELPHIA, May 13, 1868.

The market for pig-iron is not active. Bars are firm.

Anthracite Pig, No. 1	$36 00@$38 00
" " No. 2	34 00 36 00
Gray Forge	33 00 34 00
Charcoal Wheel	48 00 50 00
" Blooms	90 00 95 00
Scotch Pig	41 00 43 00
Railroad Bars (American)	78 00 80 00
Refined Bar	85 00 90 00
Common Bar	75 00 80 00
Band Iron, 1¼ to 6	110 00 120 00
" 12 to 3-16	
Hoop Iron, 1 and upwards	135 00 ....
" " ⅛	140 00 ....
" " ¾	150 00 ....
" " ⅝	175 00 ....
" " ½	200 00 ....
" " ⅜	....
Nails and Spikes	5 25 ....
" 4d	5 75 ....
" 3d	6 75 ....
" 3d, fine	8 25 ....
Boiler Rivets	7¼ pr. lb
Railroad Spikes	5@6c. "

IRONTON, Ohio, May 7, 1868.

Notwithstanding the continued dulness in trade, says the *Register*, no material reduction in rates has become apparent. A disposition seems to prevail among iron men to hold their metal a long time, rather than to make any marked concessions. The stock on hand is still quite large. All the furnaces in the county are getting ready for operation, several of which will start their fires this month. We quote this week:

Mill, hot blast	$38 00@$40 00
Foundry, hot blast	40 00 42 00
Cold blast	55 00 60 00

The receipts during the week were 580 tons; shipments, 600 tons.

The bar mills are idle, and present no indication of an immediate resumption of work. 3¾@4¼c. rates still hold.

Nails are active at $5 for 10d.

The machine shop, foundry, and hoe works are in full operation.

PITTSBURGH, May 9, 1868.

PIG IRON AND BLOOM MARKET.—A moderately fair aggregate of business is doing in crude irons, principally as mixtures to stock in hand, says the *Commercial*. Receipts have materially increased, yet in standard forge irons there is but little accumulation of stock. Common and inferior grades are in excess of demand, and in some instances, we learn, have been made at fifty cents per ton below last week's quotations. Foundry irons of all descriptions continue remarkably dull, the consumptive demand being unusually light. The few transactions noted indicate the market:

BITUMINOUS COAL SMELTED FROM LAKE SUPERIOR ORE.

300 tons Inferior, deliverable at furnace	$30 75—4 mos.
100 tons Open Gray Forge, to arrive	36 50—cash.
200 tons " "	37 50—60 dys
300 tons Gray Forge, deliverable at furnace	33 50—4 mos.
300 tons " to arrive	36 50—6 mos.
120 tons Gray Forge, deliverable at furnace	33 50—4 mos.
100 tons Gray Forge, from yard	36 00—6 mos.
50 tons Open Gray, from yard	38 00—4 mos.
100 tons Inferior	31 25—4 mos.
100 tons Medium	35 50—6 mos.
50 tons Neutral	36 00—4 mos:
100 tons Gray Neutral Lake Iron	38 00—4 mos.

CHARCOAL SMELTED.

98 tons Favorite Forge Iron	48 00—4 mos.
100 tons " "	48 00—4 mos.
198 tons " "	46 00—cash.
50 tons Fancy Iron	50 00—6 mos.
20 tons Medium Hanging Rock Foundry	42 00—5 mos.
20 tons Common No. 2 H. R. Foundry	41 00—4 mos.
50 tons Good No. 1 H. R. Foundry	45 00—4 mos.

ANTHRACITE.

300 tons Red Short Forge	36 00—cash.
50 tons Neutral Forge	37 50—6 mos.
20 tons Neutral Forge	39 00—4 mos.
20 tons No. 1 Foundry	40 00—cash.
20 tons No. 1 Foundry	41 00—4 mos.
100 tons Gray Forge	37 00—4 mos.
50 tons Mottled Forge	35 50—4 mos.
110 tons Close Gray Red Short	36 00—6 mos.
60 tons White Red Short	35 00—6 mos.

IRON AND NAILS.—The manufacturers report a moderately active demand for iron during the past week, and prices without quotable change.

The questions of finance, politics, and the next season's crops, produce great caution on the part of dealers and consumers of iron, and their demands are limited to immediate wants. The stocks of nails and spikes are broken, and manufacturers are generally engaged in filling contracts for parties who have ordered ahead.

BOSTON, May 13, 1868.

Scotch Pig, No 1		English—com	85 90
Gartsherrie	$43@44	do refined	95 100
No. 1, other brands	42 45	do sheet, per lb	6¾@10c.
American, No. 1	40 45	Russia, sheet	16@17c
Swedish—common ass'd	$150@155		

SAN FRANCISCO, April 23, 1868.

We have few sales of Pig Iron to report, quotable at $42 50@45 for the various descriptions:

Scotch & Eng. Pig, ton	42 50@— —	Boiler, 1 to 4	— — — 3½
American White, Pig	45 — — —	Plate, No. 5 to 0	— — — 3¼
Refined Bar, bad assortment, per lb	— — — 2¼	Sheet, 10 to 13	— — — 3¾
Refined Bar, good assortment, per lb	— — — 3	Sheet, 14 to 20	— — — 4
		Sheet, 24 to 27	— — — 4

LONDON, April 25, 1868.

Bars, Welsh in Lond.	£6 5 0@..	Do. railway, Wales	£5 10 0@£5 15 0
Ditto to arrive	6 2 6 6 5 0	Do. Swd. in London	10 2 6 10 5 0
Nail rods	6 15 0 7 ...	To arrive	10 2 6 10 5 0
" Stafford in Lond.	7 7 6 8 10 0	Pig, No. 1, in Clyde	2 12 9 2 17 0
Bars	7 5 0 9 10 0	Do. f.o.b. Tyne, Tees	2 9 6 .. ....
Hoop	8 5 0 9 15 0	Do. Nos 3, 4, f.o.b. do	2 6 6 2 7 0
Sheets, single	9 0 0 11 0 0	Railway chairs	5 10 0 5 15 0
Pig, No. 1, in Wales	3 15 0 4 5 0	" spikes	11 0 0 12 0 0
Refined metal, ditto	4 0 0 5 0 0	Indian Charcoal Pigs	
Bars, common, ditto	5 10 0 5 15 0	in London, pr. ton	7 0 0 7 10 0
Do. merch. Tyne or Tees	6 10 0		

STEEL.

Swed., kegs (rolled)	14 5 0	Swed., in faggots	16 0
" (hammered	15 15 0 15 00 0	English, spring	17 0 0 23 . 0

IRON.—In Staffordshire, since the reduction in prices, says the *Mining Journal*, the leading iron masters have received rather more orders, and there appeared a prospect of a better demand, had there been no strike, but as this has taken place, it has materially interfered with business. At some works the men have returned to their employment, and at others they are expected to do so next week, while at some they seem still determined to hold out. In Welsh, the iron masters are able to keep their establishments in better employ than for a long time past, and there are indications of a return of prosperity to the trade ere long. For rails (the chief manufacture of the local makers) there is an increased demand, principally on account of the United States, the advices from which show that stocks are low, and large supplies are almost certain to be required from this country. Freights are offered to carry iron to the Russian markets, and as the season advances, it is expected that the exports will gradually expand. Home buyers are beginning to see the importance of placing contracts without delay, so as to secure the advantages of the present low prices, and whenever the finances permit, the railway companies are entering into engagements more freely. In Swedish iron rather more business is doing, but holders are, however, not quite so firm in their prices. In Scotch pig iron, the market has been exceedingly quiet during the week, and the price has hardly varied at all, closing the same as last week, 52s. 3d. cash.

STEEL remains rather dull.

THE COAL TRADE.

NEW YORK, May 15, 1868.

There has been more inquiry for Coal during the past week, and prices are a shade firmer. The leading Lehigh and Schuylkill dealers have more orders than they can fill at present. The strike still continues in some of the Lehigh collieries, but most of the men have resumed work at an advance of 15c. per car.

Freights remain unchanged. Vessels are in good supply.

Manufacturers and others in Harlem will be pleased to learn that Mr. Charles E. Valentine has just put in a supply of our best Coals for manufacturing and family use. Gentlemanly treatment and full weight can be relied upon at his yard in 11?th street near Third avenue.

We have on our table one of the finest specimens of Lehigh Coal we have ever seen. It was taken from a vein in the Sugar Loaf Colliery, of which Messrs. G. B. Linderman & Co. are sole miners and shippers. Other specimens can be seen at their office, 111 Broadway.

The Honey Brook Coal Company, of which Mr. James H. Lyles is agent, have removed from 113 Broadway to new and elegant offices at 111 Broadway. They are also miners of a superior Lehigh Coal.

PHILADELPHIA, May 13, 1868.

The market continues dull with a small stock at our quotations given elsewhere, by which it will be noticed that Locust Mountain coals have declined in price and that some kinds of Schuylkill have advanced.

BOSTON, May 13, 1868.

English Cannel has been selling in small lots at $20 per ton, but the demand is quite limited. In Pictou, the sales have been at $7 50@7 75, and Sydney ranges from $8 to $8 25 per ton; Cumberland has been selling at $8@8 25, and delivered at Baltimore, $4 75, and at Georgetown $34 35 per ton; Pennsylvania and Westmoreland Gas has been selling at $7 20, delivered in Philadelphia. Anthracite ranges from $5 50@6 50 per ton, by the cargo, and $6@7 50 in retail lots.

The amount of coal exported from the port of New York, for the week ending May 12, was:

Exports for the week, tons	2,070
" from January 1, tons	17,370
" same time last year, tons	23,163
Decrease	5,793

The following table exhibits the quantity of Coal passed over the following routes of transportation for the week ending May 9, 1868:

	1867.		1868.		INC. OR DEC.	
	WEEK.	YEAR.	WEEK.	YEAR.	WEEK.	YEAR.
Phil. & Reading R. R.	67,479	1,013,638	62,074	1,007,510	d 5,405	d 6,128
Schuylkill Canal	22,942	170,118	38.793	184,107	i 15,851	i 13,989
Lehigh Valley R. R.	41,617	609,619	46,924	871,505	i 5,307	i 261,886
Lehigh Canal	12,262	93,431	27,542	104,687	i 15,280	i 11,256
Scranton North	5,397	127,330	10,089	135,742	i 4,692	i 8,412
" South	15,098	442,223	24,071	381,705	i 8,973	d 60,518
Penn'a Coal Co. Rail	12,908	227,989	20,610	245,103	i 7,702	i 17,114
Penn'a Coal Canal	120	3,266	1,180	3,637	i 1,060	i 371
Del. & Hudson Canal	21,960	248,405	52,700	224,963	i 30,740	i 23,442
Shamokin	5,341	137,782	12,038	133,764	i 6,497	i 4,016
Trevorton	1,029	9,250	384	6,326	d 645	d 2,924
Short Mountain	1,655	10,721	2,523	16,791	i 868	i 6,070
Lykens Valley C. Co.	1,242	16,796	1,956	25,771	i 714	i 8,975
Broad Top	.....	79,996	6,594	77,997	.....	d 1,999
Wilmstown Col'y, E.	.....	20,784	.....	45,025	.....	i 24,241
Total	209,050	3,211,348	307,478	3,464,633	.....	.....
	.....	.....	209,050	3,211,348	.....	.....
Increase	.....	.....	98,428	253,285	.....	.....

Schuylkill Coal Trade.

BY RAILROAD AND CANAL, FOR WEEK ENDING MAY 14, 1868.

	RAILROAD.	CANAL.
St. Clair	36,355	.....
Port Carbon	7,273	11,390
Pottsville	1,443	1,437
Schuylkill Haven	17,753	20,372
Auburn	3,384	.....
Port Clinton	2,563	1,069
Total for week	69,276	34,268
Previously this year	1,007,510	184,107
Total	1,076,786	218,375

Cumberland Coal Trade.

By B. & O. RAILROAD.—The shipments over the Baltimore and Ohio Railroad, for the week ending May 9, were as follows:

From Cumberland & Pa. R. R., via Cumberland:	
Consolidation Company	2,334 06
Borden do.	1,741 09
Allegany do.	10 09
New Hope do.	.....
Midland do.	11 06
From George's Creek via Piedmont.	
George's Creek C. & I. Company	2,246 19
Savage Mountain	.....
Central "	2,024 17
Atlantic "	661 09
Piedmont "	1,250 06
American	2,267 03
Swanton "	411 06
Potomac "	1,454 13
George's Creek Mining	.....
Hampshire	2,620 10
Franklin "	436 12
Total	17,458 10
From Eckhart Railroad.	
C. C. & I Co	2,142 14
Total	19,601 04

Report of Coal Transported over Lehigh Valley Railroad and Canal

For the week ending May 9, 1868, compared with same time last year:

SHIPPERS.	RAILROAD. Week. Tons.	RAILROAD. Total. Tons.	CANAL. Week. Tons.	CANAL. Total. Tons.	Grand Total.
FROM MAUCH CHUNK.					
Summit Mines	....	....	11,903	45,972	45,972
Room Run Mines	....	....	577	577	577
Total	....	....	12,480	46,549	46,549
WYOMING REGION.					
Franklin Coal Co	....	....	....	....	....
Audenried	50	50	....	....	50
Lehigh & Susquehanna	....	....	....	....	....
Germania Coal Co	4,759	4,759	....	665	5,424
Wilkes Barre C. & I.	13,024	13,024	1 945	12,730	25.774
Warrior Run	10,700	10,700	....	....	10,700
Parish & Thomas	1,167	27,120	384	1,562	28,682
New Jersey	55	8,280	223	676	8,956
Union Coal Co	....	2 432	....	....	2,432
Wyoming C. & T. Co	....	3,227	....	....	3,227
Newport Coal Co	....	....	....	....	....
Morris & Essex Mut'l	....	1,241	....	....	1,241
East Boston Coal Co	....	....	82	82	82
John Horton	....	....	92	378	378
Plymouth Coal Co	....	152	....	....	152
Hillman & Son	372	4,977	....	....	4,977
Bowkley, Price & Co.	....	149	....	....	149
Mineral Springs	587	7,922	....	....	7,922
Valley Coal Co	....	....	....	....	....
Enterprise C'y, J.H.S.	444	11,899	92	222	12,121
G. B. Linderman & Co	....	....	....	....	....
Washington Coal Co.	....	....	....	....	....
West Pittston	50	50	....	....	50
Barclay	....	....	....	....	....
Shawnee	207	3,093	281	1,116	4,209
Consumers Coal Co	39	2,160	....	....	2,160
Harvey & Bro	113	1,576	93	93	1,669
Wyoming Valley	....	1,916	....	....	1,916
Henry Colliery	....	513	....	....	513
New England	205	435	....	....	435
Del. & Hudson C. Co.	....	11	46	46	57
Other Shippers	....	14	353	1,807	1,821
Total	3,244	105,712	3,594	19,381	125,093
FROM E. M. REGION.					
N.Y. & L. [T.H. & Co	1,747	23,021	186	469	23,490
Honey Brook Coal Co.	1,400	41,129	192	568	41,688
Ger Pa. Coal Co	661	16,939	98	829	17,768
Spring Mountain	1 083	35,055	....	95	35,150
Coleraine W.T.C. & Co	2,239	29,439	557	1,463	30,902
B. Meadow (D. W.)	55	55	....	....	55
John Connery	....	....	....	....	....
Lehigh Zinc Co	....	....	....	....	....
Spring Brook	....	....	....	....	....
Other Shippers	12	163	....	....	163
Total	7,199	147,195	1,031	3,427	150,622
HAZLETON REGION.					
Central Coal Co	....	....	....	....	....
Ashburton Coal Co	....	433	....	64	497
Mt. Pleasant [Halsey	320	7,595	256	458	8,053
Hazleton (A. P. & Co)	7.102	99,323	2,108	7,986	107,309
East Sugar Loaf	4,754	61,681	....	192	61,873
Mount Hall	....	219	....	....	219
Latimer (A. P. & Co)	1,009	15,963	95	95	16,058
Stout Coal Co	993	13,471	829	1,763	15,784
Harleigh Coal Co	1,292	22,300	850	2,333	24,633
Ebervale Coal Co	2,024	31,806	974	3,560	35,366
Jeddo (G. B. M. & Co)	3,278	56,014	1,164	4,578	60,592
Woodside (J. C. Co	496	6 613	421	1,097	7.710
Highland	1,008	26,494	875	2,355	28,849
Cross Creek (C. B.)	531	10,419	222	1,086	11,505
C'l Ridge [S.W. & Co.	2,168	38,976	1,526	4,650	43,626
Buck Mountain	645	25,558	542	2,930	28,488
Other Shippers	....	....	....	....	....
Total	25,625	417,172	9,807	33,355	450,527
U. LEHIGH REGION.					
U. Lehigh Coal Co	516	25,466	541	1,890	27,356
Other Shippers	....	....	....	....	....
Total	516	25,466	541	1,890	27,356
MAHANOY REGION.					
Mt. Rose Coal Co	203	739	....	....	739
Mount Etna Coal Co	465	2,306	83	83	2,389
Mahanoy Col. [N.M.M	208	11 317	....	....	11,317
Coplay Colliery	1,040	7,057	....	....	7,057
Glendon	1,067	14,920	....	....	14,920
Primrose Colliery	787	2,307	....	....	2,307
E. S Silliman	1,535	39,769	....	....	39,769
McNeal Co	768	28,392	....	....	28,392
Knickerbocker	1,607	25,004	....	....	25,004
Thomas Coal Co	802	12,385	....	....	12,385
Williams & Herring	74	3,685	....	....	3,685
New Boston Coal Co	1,385	17,971	....	....	17,971
Shamokin Coal Co	....	....	....	....	....
Caledonia M. & M	454	9,290	....	....	9,290
Coal Run Catawissa RR	....	....	....	....	....
Other Shippers	15	15	....	....	15
Total	10,337	175,957	83	83	176,040
Grand Total	46,924	871,505	27,542	104,687	976,192
Same time last year	41,617	609,619	12,232	93,431	698,050
Increase	5,306	261,886	15,280	11,255	275,141
Decrease	....	....	....	....	....

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, May 15, 1868.

Schuylkill R. A., choice	$6 00@$6	Schuylkill Chestnut	4 50 ....
" Ordinary	5 75	Lehigh W.A Lump Old Co	5 00 ...
" W. A. Lump	5 00	Lehigh Broken	4 87½ ....
" Steamboat	5 00	" Egg	4 87½ ....
" Broken	5 00	" Stove	5 12½ ....
" Egg	5 50	" Chestnut	4 37½ ....
" Stove	5 50		

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R. A., Sch'kill	6 00	Old Co.'s W. A. Lehigh	5 50 ....
Locust Dale W. A., "	5 50	Mt Pleasant	5 00 ....
Honey Brook " Lehigh.	5 50	Broad Mountain	....
Harleigh " "	5 50	Buck Ridge W. A., Sh'kin.	....
Spring M'n " "	5 50	H. Heils, E. S'kiln. Lorb.	5 50 ....
Sugar Creek " "	5 50	New England Red Ash	5 25 ....
Ashburton " "	5 50	Wyoming	5 50 ....

Dealers in these Coals may be found in our advertising columns.

At Philadelphia, May 15, 1868.

Lehigh Lump and St'mb't.	5 00@....	Locust Mount Lump and Steamboat	3 25 3 40
" Broken and Egg	5 00	" Broken	3 25 3 60
" Stove	5 50	" Egg	3 60 4 00
" Chestnut	4 25 ..	" Stove	4 00 4 15
Schuylkill R. A	4 25 4 50	Lorberry Coal	4 50 ....
" Chestnut	2 60 2 70	Shamokin	....
" W. A. Lump and	3 25	Franklin, (Lykens Valley)	5 00 ....
" Broken	3 25 3 50	Broad Top	4 60 ....
" Egg and Stove	3 75 4 00		
Schuylkill Chestnut	2 75@....		

Scranton Coal at Elizabethport, May 15, 1868.

(Corrected weekly by D. L. & W. R. R. Co.)

Lump	$4 00@....	Egg	4 50 ....
Steamer	4 25	Stove	5 00 ....
Grate	4 25	Chestnut	4 25 ....

Prices for Pittston Coal at Newburgh, May 15, 1868.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton of 2240 lbs.	$4 10@....	Egg " " "	4 20 ....
Steamer, " " "	4 10	Stove " " "	4 65 ....
Grate " " "	4 20	Chestnut " " "	4 05 ....

70 cents additional to New York.

Lackawanna at Rondout, May 15, 1868.

Lump	$4 25@....	Egg	$4 35@....
Steamer	4 35@....	Stove	4 75 ....
Grate	4 35@....	Chestnut	4 25 ....

70 cents additional to New York.

Lehigh Coal at Elizabethport, May 15, 1868.

Lump	5 00@....	Chestnut	4 25 ....
Steamboat and Broken	4 75	Stove	5 00 ....
Egg	4 75		

At Baltimore, May 15, 1868.

Wilkesbarre & Pittston W. A. by car	$5 25@5 50	From wharf or yard, 50c. to 75c per ton additional	
Lykens Valley R. A. by car	....@ 5 55	Retail, del'd, per 2,240 lbs	7 00@7 50
Sunbury & Shamokin R. or W A. by car	5 00 5 50	George's C'k and Cumberland f. o. b. at Locust P't for shipping	....@4 75

At Havre de Grace, Md.

Wilkesbarre or Pittston, W. A., on board	....@5 50	Sunbury or Shamokin, R. or W. A., on board	....@5 50
Trevorton R. A., on board	.... 5 50	Lykens V'y, R. A. on b'd.	....@5 75

At Georgetown, D. C. and Alexandria, Va.

George's Creek and Cumberland f. o. b. $....@ 4 35

Prices of Gas Coals.

May 15, 1868.

PROVINCIAL.	Coarse. Gold.	Slack. Gold.	AMERICAN	Coarse. Currency.	Slack. Currency.
Block House	$1 75	$ 75	Westmoreland Co.	$8 25	$8 00
Gowrie	1 75	75	Despard	8 25	8 00
Lingan	1 75	75	Cameron	8 25	8 00
Sydney	2 13¾	71¼	Penn	8 50	8 00
Pictou	2 13¾	1 18¾	Newburgh Orrel Gas	8 50	8 00
Little Glace Bay	1 75	1 00	Delivered in New York.		
International Co.'s	1 75	....			

Prices of Foreign Coals.

Duty $1.25 per ton.

Corrected weekly by PARMELEE BROS., 32 Pine Street, N. Y.

Liverpool Gas Caking	$ 9 50	Liverpool House Cannel	18 00@19 00
" " Cannel	14 00	" " Orrel	16 00@18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD:

Liverpool House Orrel, scr'd. $18@20 | Livp'l House Can'l, scr'd. 22 00@— —

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

Rates of Freight from Newburgh

RIVER.		EASTERN.	
On "Pittston" Coal, by boats and barges of the Pennsylvania Coal Company, per ton of 2,240 lbs.		Stamford	$1 25
Troy and West Troy	$ 55	Norwalk	1 25
Albany and Greenbush	50	Bridgeport	1 25
Coeymans	45	New Haven	1 25
Coxsackie and Stuyvesant	40	New London	1 40
Hudson & Catskill	35	Norwich	1 50
Sangerties and Barrytown	35	Mystic	1 45
Rhinebeck and Rondout	30	Stonington	1 45
Po'keepsie and New Paltz Land.	25	Bag Harbor	1 45
Fishkill Landing	20	Bristol	1 55
Cold Spring and West Point	20	Newport	1 55
Peekskill	40	Fall River	1 55
Haverstraw	45	Providence	1 60
Sing Sing and Nyack	60	Dighton	1 60
Tarrytown and Piermont	50	Warren	1 60
Yonkers	55	Pawtucket	1 75
The Coal must be discharged with all reasonable dispatch, at the expense of the consignee, who shall also pay wharfage on the boat. Boatmen will tend guy while unloading.		New Bedford	1 90
		Boston	1 90
		East Cambridge	2 10
		Salem	1 90
		Newburyport	2 00
		Portsmouth	1 95
		Portland	1 75

Freights on Coal Sea-borne from Port Richmond, Philadelphia.

May 6, 1868.—From Philadelphia & Reading Railroad Wharves, Phila., to

Boston	2 50	2 80	New York	1 30	1 40
Salem	2 70	2 80	Jersey City	1 35	1 40
Providence	2 00	2 25	Gloucester	2 80	— —
New Haven	— —	2 00	Ipswich	3 00	— —
Cambridgeport	2 00	2 90	Manchester	2 75	— —
Bath	2 50	— —	Nantucket	2 80	— —
Charlestown	2 50	2 80	New Bedford	2 00	2 10
Albany	1 50	— —	Newport	2 25	— —
Brooklyn	1 35	1 40	Greenpoint	1 40	— —
Williamsburg	1 40	— —	West Chester	1 50	— —
Portland	2 35	2 80	Dennis	2 50	— —
Portsmouth	2 00	2 35	Pawtucket	2 30	— —
Cambridge	2 75	— —	Bridgeport	2 00	— —
Danversport	2 80	— —	Mystic	2 00	— —
Dorchester	2 80	— —	New London	2 00	— —
Fall River	2 25	— —	Norwalk	2 00	— —
Stonington	2 10	2 25	Troy	1 80	— —

From Elizabethport and Port Johnston.

Albany	$1 00@— —	New London	1 20 — —
Boston	1 75 — —	Newport	1 40 — —
Bridgeport	1 00 — —	New York	60 — —
Fall River	1 50 — —	Norwalk	1 18 — —
Hartford	1 50 — —	Norwich	1 25 — —
Hudson	1 00 — —	Pawtucket and towing	1 60 — —
Lynn	— — — —	Portland	1 75 — —
Middletown	1 25 — —	Portsmouth	1 75 — —
New Bedford	1 50 — —	Providence	1 40 — —
Newburyport	2 10 — —	Salem	1 75 — —
New Haven	1 00 — —	Taunton	2 00 — —

Rates of Transportation to Tide Water.

[BY RAILROAD.]

To Port Richmond.—(Philadelphia.)

Philadelphia and Reading R. R. from Schuylkill Haven $2 00

The following are the drawbacks allowed on all coal shipped East of New Brunswick and South of Cape Henry, until further notice:

	Drawback.	Freight.	Nett.
Lump	$1 25	$2 00	$ 75
Steamboat	1 15	2 00	85
Broken	1 00	2 00	1 00
Egg	65	2 00	1 35
Stove	50	2 00	1 50
Chestnut	75	2 00	1 25

From Port Carbon, 8 cents per ton more.

To Elizabethport.

L. V. Railroad from Mauch Chunk to Easton	$ 60
C. R. R., N. J., Easton to Elizabethport	1 06
	1 75
Shipping Expenses at Elizabethport	25
Total	2 00

To Port Johnson.

L. V. R R	$ 60
C. R. R. of N. J.	1 12
Shipping Expenses	25
Total	2 06

To Hoboken.

L. V. R.R.	60
Morris & Essex R.R.	1 12
Shipping Expenses	25
Total	2 06

[BY CANAL.]

To Port Richmond.

From Schuylkill Haven to Port Richmond	$1 00
Freights and tolls by Raritan Canal	1 99
	2 99
Drawback	30
Total	2 69

To New York.

From Mauch Chunk to New Brunswick, by Lehigh, Del. Div. and Del. & Raritan Canal	$ 90
Freights through	1 25
Towage	20
	2 35

To New York via Morris Canal.

Lehigh Canal	$ 34
Morris "	40
Towage	10
Freight	1 55
Total	2 39

Expenses from Mauch Chunk to Jersey City for Re-shipment.

Lehigh tolls (net)	$ 34
Morris "	34
Freight	1 50
Re shipping	30
Total	2 48

Provincial Freights.

	Currency.
Sydney to N. Y.	....
Lingan	....
Cow Bay	....
Big Glace Bay	....
Little "	3 00

Foreign Freights.

New Castle and Ports on Tyne	£13@15 keel
Liverpool	12s. 6d.@16s. ton.

New York Imports of Metals, &c.

The following will show the imports of Metals, &c., at the port of New York from foreign ports, for the week ending May 8, 1868. The quantity is given in packages, unless otherwise specified.

Metals, &c.	Quantity.	Value.		Quantity.	Value.
Anvils	267	2,468	Iron, other, tons	3,826	105,378
Brass Goods	7	522	Lead, Pigs	10,619	52,480
Bronzes	2	131	Metal Goods	187	10,741
Chains and An	106	3,919	Nails	5	235
Copper	....	298	Needles	11	6,471
Cutlery	50	18,405	Old Metal	....	316
Guns	34	1,483	Plated ware	2	592
Hardware	29	5,777	Percussion Caps	18	2,702
Iron, hoop, tons	44	1,810	Saddlery	22	2,447
Iron, Pig, tons	1,120	15,993	Steel	3,061	34,520
Iron, Railroad bars	13,404	69,475	Silver ware	3	113
Iron, Sheet	2	241	Tin, boxes	35,097	213,080
Iron tubes	100	189	Tin, slabs, 2,201	214,103	33,706
			Zinc, lbs	278,300	15,883

San Francisco Coal Trade.

[From the *Commercial Herald* April 22, 1868.]

SAN FRANCISCO, April 22, 1868.

There is little of any description on the market from first hands. Imports have been inconsiderable, though several cargoes are known to be en route from Australia. The cargo of 1,200 tons Cardiff, ex Wm. Wilcox, has been sold upon terms withheld. In the absence of sales, we give the following figures for cargo parcels: Australian $13 50@14; Anthracite, $14@16; Chila, $12@13; Cumberland, $20@22, the latter in casks; English, $13 50@14 50; Bellingham Bay, $11; California, $7@9 per ton.

Anthracite, tons	14,363	Coos Bay, tons	2,929
Australian, tons	1,579	English, tons	5,143
Bellingham Bay, tons	4,950	Lehigh, tons	1,941
Cumberland, cks	1,399	Mt. Diablo, tons	28,505
Chili, tons	700	Nanaimo, tons	9,612

BOSTON STOCK MARKET.

(By Telegraph.)

BOSTON, May 15, 1868.

The following were the prices of mining stocks bid, to-day:

Calumet	—	Quincy	23
Copper Falls	21½	Cary Improvement	8¾
Franklin	13½	Isle Royal	—
Hecla	—	Water Power	20¾
Hancock	3¾	Bos., Hart & Erie RR	15
Minnesota	3	Rockland	—

SAN FRANCISCO STOCK MARKET.

A telegram from San Francisco, dated May 11, to Messrs. LEES & WALKER, Bankers, 33 Pine street, this city, quotes stocks as follows:

STOCKS.	Bid	per ℔.	STOCKS.	Bid	per ℔.
Gould & Curry	535	@ 540	Belcher	345	@ 351
Savage (per share)	156	@ —	Uncle Sam	249	@ 252
Chollar Potosi	235	@ 237	California	86	@ 87
Ophir	167	@ —	Imperial (per share)	..	@ ..
Hale & Norcross	2,500	@2,550	Alpha	..	@ ..
Crown Point	2,688	@2,787	Kentuck (per share)	467	@ 470
Yellow Jacket	1,435	@1,430	Cal. Steam Nav'n Co.	..	@ ..

Improvements in Making Nitro-Glycerine.

Some improvements in the preparation of nitro-glycerine have been patented in France by Mr. E. KOPP, of Saverne. He states that when three parts of sulphuric acid at 66° and one part of nitric acid at 48° or 49° are mixed together, nitrous vapors are disengaged for a considerable time. These vapors, besides being in the glycerine—one of the principal causes of so many terrible accidents—are extremely dangerous to the health of the workmen engaged in the preparation of this product. To remedy this, Mr. Kopp mixes at first these acids in the same factory where they are prepared; an interval of several weeks is allowed to elapse between the mixings and the employment of the compound, which gives out, consequently, less vapors. Latterly it was found that if the the vapors of mono-hydrated nitric acid, disengaged from the retorts where this acid is manufactured, be made to pass through a Wolfe's apparatus containing sulphuric acid at 66°, we finish by obtaining a veritable combination of mono-hydrated sulphuric acid with mono-hydrated nitric acid. The preparation of nitro-glycerine is thus effected. In a wooden, cylindrical vessel, half or a third full of cold water, Mr. Kopp places a cylinder with a spout, either of cast-iron or steel, containing three or four litres, so that the surface of the cold water shall come within two or three centimetres of the edge of the metallic cylinder. Then a quantity of the nitro-sulphuric acid, as much as can be contained in a porcelain vase of one or two litres, prepared beforehand, is introduced into the steel cylinder. A second vase of tin, holding one-third of the porcelain one, is filled with glycerine, which is then added slowly to the acid, being kept stirred with an iron or steel rod, taking care that the mixture does not become heated. The reaction is allowed to take place during seven or eight minutes, after which the contents of the metallic cylinder are then poured into the water of the wooden vessel and continually stirred. After a few minutes repose the greater bulk of the water may be poured off, and the rest of the water poured along with the nitro-glycerine into a glass funnel furnished with a gutta-percha tube with a wire stop, so that the product which settles can be drawn off by degrees after every operation. By this means 600 or 700 grammes per operation, or 2 or 3 kilos. per hour are obtained.

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NEW YORK, SATURDAY, MAY 16.

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NOTICE TO SUBSCRIBERS.

Subscribers receiving their paper in a *blue* wrapper will accept the same as a notification that their subscriptions have expired, and that the JOURNAL will be discontinued unless we are otherwise authorized.

REDUCTION OF COLORADO ORES.

A serious obstacle seems to lie in the way of the present prosperity of the mining districts of Colorado, and thereby, of course, an oppressive, deadening influence is exerted upon the general interests and welfare of that entire community. The advancement of Colorado in the scale of wealth and civilization, must, necessarily, be the result of a legitimate, scientific, and economical development of her vast internal mineral resources. Her prospective power lies not in a great stretch of country that can be devoted to agricultural pursuits, not in "broad acres," unsurpassed in fertility of soil, that are welcoming the approach of the herdsman and the husbandman. Her mountain valleys are, to be sure, rich, and give ample reward to the work of the ploughman's hand; but they are correspondingly small; they do not furnish a field for labor whereby the people and the State may soon become wealthy and influential. Nor yet, on the other hand, can she hope for future success in the coming and going of a great commercial fleet. The oceanic waters touch not her borders. She can only contribute her mountain streams to the general commercial good. If then in her mining interest alone, Colorado can hope for eminent distinction, if to that alone, she can look for a brilliant career, naturally enough, she is more than ready to welcome every means that shall have a tetidency to give her an impetus in the right direction; whether such means consist in opening new lines of railway communication, whereby the cost of labor and material will be eventually cheapened, or in improved methods of working mines, dressing and smelting ores, whereby new growth and vigor will be given to her prospectively great mining and metallurgical interests. In either case, it matters not which, a greater per centage of profit would accrue to a legitimate investment of capital and labor; and as a consequent, new life would be infused into all the business avenues of that growing community.

As, in the play of the steam engine, we have what is called the "dead-point," resulting from the even balance of two opposing forces; so in the advancement of the mining interests of Colorado, there seems to have been, and even yet to be, a "dead-point." On the one hand, the stupidity that sank its tens and hundreds of thousands of dollars in the erection of mills, machinery, &c., for the purpose of working veins that never did, nor never will contain metalliferous ores to any appreciable extent, and on the other hand the ignorance that vainly attempted to win precious metal from pyritical ores by rude methods of amalgamation, were met by a severe and just rebuke, in the total lack of confidence on the part of capitalists, who had invested in these enterprises so ill-conceived, ill-advised, and ill-conducted, from beginning to end.

And now the question naturally suggests itself as to what is the balance wheel that is to carry the enginery of progres sive movement in Colorado mining interests over and beyond this dead-point, at which it has so suddenly stopped. We have already hinted at the answer to such an interrogation. We find it in the laying of every rail that speeds the locomotive into the heart of that mining region. We shall find it, too, in the going thither of men of well known scientific ability—men who are armed not only with skill and scientific research but also with practical experience enough to enable them to meet with success in coping with the obstacles that lie in their way. No one, at the present moment, doubts for an instant the mint of treasure that now lies, locked by the hand of nature, within the recesses of those mountains. No one should any longer doubt the fact, that the ores of Colorado, in regard to their chemical and mineralogical character, are "nothing new under the sun." Ores similar in composition, naturally just as obstinate as they, are now, and have been for years, worked easily and economically in other quarters of the globe. Already a step in the right direction seems to have been taken in Colorado. From an editorial article in the columns of the Colorado *Miner* we are glad to learn of the success of "Garrott Martine & Co.'s Reduction Works." In order to inform our readers as to the success of the operations carried on at those works, we will quote a few lines from the article mentioned. It says:

"We are enabled to lay before our readers the amount of ore treated, and the gross production of these works, commencing with the 7th of August last, and ending with the 1st of April, 1868. During that time the works have run about seventy days, and have treated 166 tons 1300 lbs. of ore, from thirty-five different lodes. The capacity of the works is less than three tons per day, and some of the ore was heavy with galena and zinc-blende, while the most of it was just as it came from the hands of the miners, many of whom were not experienced enough to distinguish mineral from granite, the amount produced in the time stated, being $18,124 90 coin value, and may be summed up as follows:

"Number of lodes, 35; amount of ore, 166 tons, 1300 lbs.; silver coin value, $18,124 90.

"This result shows an average yield of $109 79, coin value per ton of silver, and will, we think, compare favorably with any silver region in the world."

We hail this bit of intelligence as a good omen. It indicates that steps are being taken, to some extent at least, in the right direction. It is a fact, patent to all, that Colorado needs smelting works for the reduction of her ores. Has the time come when well-known processes for the smelting of ores of their character can, upon economical grounds, be safely introduced?

The ores are there, great in quantity, and rich in quality. We believe the auspicious moment is just at hand; that now is the time for monied men who would have a permanent, substantial, and profitable interest in the natural wealth of Colorado, to make thorough investigations, and then, other things being equal, to set to work in right good earnest. Nor should they fail to keep themselves constantly under the guidance of honesty, skill, and good common sense. We believe the time is near at hand when the same scientific skill that takes the gold and silver bearing pyrites of the Hartz Mountains, and puts it through a complicated series of metallurgical processes, causing it, in the end, to give up its copper, silver and gold, and that, too, at a highly profitable rate of cost; we believe, we repeat, that the same scientific skill will very soon take the pyrites of Colorado and, on the spot, either by means of the same, or allied processes, cause it to give up its copper, silver and gold, and that, too, at a rate of cost that will render it a source of great profit to him who invests capital in the undertaking. Let, then, the owners of Colorado mines be patient. In the history of that young and enterprising Territory a new era is about to begin. The balance wheel that is to carry her enginery past the "dead-point," already begins to move. Once well under way, who will venture to predict when her onward progress will cease?

STEEL FROM ENGLISH IRON.

From occasional articles in the columns of the London *Mining Journal*, we learn that searching, persistent efforts are now being made in order to convert English iron into steel that shall have a really marketable value. It seems there are two principal reasons that have thus far been the root of all the difficulty that metallurgists have met with, in their attempts, hitherto made, to bring about such a very desirable consummation. These great obstacles in the way of success, have been the impurities in the ores of iron on the one hand, and the impurities in the fuel, taken up by the iron during the process of smelting those ores, on the other. It is well-known that sulphur and phosphorus are the principal foes with which the smelter has to contend in his endeavor to produce iron and steel of first class quality. Among the many skillful devices for converting iron into steel that have lately been brought into successful operation, none have thus far achieved success to any extent at all, when applied to the working of the English iron. But the great success that has attended the Bessemer process in the converting of iron into steel, has naturally stimulated scientific men in England to renewed efforts in the attempt to eliminate the impurities from their iron in such a measure as to bring about the desired end. From what we have been able to learn, we may reasonably conclude that the attempt, in one instance at least, will be crowned with success. The case to which we allude is, the converting of the "Cleveland" iron into steel. It seems that phosphorus is the principal impurity contained in their iron, It has hitherto rendered it unfit for the manufacture of steel. The process of MR. HARGREAVES, should it prove a complete success, will be signalized by a double triumph; for not only does it claim to produce a good merchantable steel from that very impure iron, but also to utilize the chief impurity in such a way as to give it a commercial value. It is proposed to make use of the impurities, removed from the iron in the process of conversion, for the manufacture of phosphorus, phosphoric acid and other chemical compounds that will possess a commercial value.

Should this prove a success, what shall we look for next? Perhaps in course of time we shall have some scientific mind, penetrating enough, to invent a process by means of which that other obstinate enemy, sulphur, may be got rid of as effectually, and as profitably as the phosphorus promises to be in the present instance. Such a desideratum would most assuredly prove a blessing to the two continents.

STARTLING, IF TRUE.

The old saying, that when we consider ourselves the safest, we are often in the greatest danger, has, in the run of human life, proved itself true in a multiplicity of ways. Nor is it to be expected but that in one way or another, it will continue to prove itself true. Within certain limits, we live in the midst of fortuitous circumstances, nor has the veil of ignorance as yet been torn completely away from before our mind's eye. When upon a cold winter's day we have sat "toasting our shins" beside a hot cast-iron stove, who of us ever imagined that at the same moment we were taking into our system the seeds of disease, and perhaps even of death? Who of us ever imagined that that hot glowing furnace of iron performed a double mission? That while it was infusing its superabundance of heat into our benumbed limbs, it was also at the same instant, feeding us large doses of invisible poisons?

But there seems to be more than an even chance that such is the case. An article from the *Lancet*, found in the columns of our to-day's paper, has much in it that goes to substantiate what we have said. If it has been, or is soon to be established, that our cast-iron stoves, when heated up to a certain point, permit the passage of noxious gases through the interstices of the metal, and that, too, in quantity sufficient to bring on sickness, and under certain conditions, an epidemic disease, most assuredly, it is a fact of the most vital importance in a sanitary point of view, and of the highest interest when looked at from a scientific stand-point.

If it be true, that the atmosphere, in the presence of these stoves, is poisoned by a diffusion of hydrogen and oxide of carbon, as it is claimed that M. DEVILLE has shown in his lecture-room experiments, then we trust the era of cast-iron stoves will come quickly to an end. Stoves of common sheet iron, lined with bricks, or perhaps better, the soap-stone stove must take their place, or if neither of these, a spirit of invention will soon furnish us a substitute.

We are glad to learn that the matter has attracted the attention of the Academy of Sciences, to such an extent as to induce the appointment of a committee to make further investigations in regard to the real merits of the case. M DEVILLE has been appointed upon this committee, and as a result of the researches of that celebrated chemist, we hope to learn soon, in how far the conclusions drawn from previous investigations upon the subject will hold good.

SOMETHING ABOUT GRAPHITE.

We have lately received several samples of newly discovered deposits of black-lead, together with letters asking information about the same. An article upon this subject will, therefore, serve as an answer to the various inquiries made, and we trust will also be agreeable to our readers in general.

The name black-lead has, very inappropriately, been given to this peculiar form of carbon, partly on account of some outward resemblance, but principally from the fact that it was first used in place of metallic lead, for purposes of ruling. The Greeks used a sharp edged leaden disk for ruling the parchment of their manuscripts, and called this disk "*paragraphos*," whence our word *paragraph*.

The so-called "*silver drawings*" of the 14th and 15th centuries, by VAN EYCK, MEMLINK and other artists of that period, were made with metallic lead, on paper coated with chalk, and later with calcined bone-dust; at the present time, note-books are manufactured in New York of such paper. They are similar in character to the so-called porcelain visiting cards, and are to be written upon with a pencil made of a metallic lead-point, which leaves an ineffaceable handwriting.

From the year 1300 till the time of MICHAEL ANGELO, the Italian artists used pencils of an alloy of lead and tin, the marks of which could be rubbed out with bread crumbs. This last operation may be resorted to even at the present day, to efface marks of hard lead pencils on paper, as a substitute for india rubber.

The use of metallic lead for similar purposes was, however, at once abandoned upon the discovery of the graphite mines at Burrowdale, Cumberland county, England, in 1564; from which lead-pencils were at once manufactured, very similar to those in use at the present day. This graphite was so fine that it was simply sawed into long strips, which were then glued into grooved pieces of wood. Those so-called lead-pencils soon became so celebrated, that they constituted an important branch of English industry, and, indeed, deservingly too. In order to shut off all competition, the English government prohibited the exportation of the graphite, and a black-lead market was established in London, where, once a

month, just enough was sold to supply the wants of the pencil-makers. The price varied according to quality, from two to three pounds sterling, per pound averdupois; and in order to keep the price up, the mines were worked only six weeks in a year, during which time black-lead to the value of nearly £40,000 sterling was usually taken out. The mines were always protected by a military force, to prevent the stealing of the precious mineral. Notwithstanding these precautions, the mines became finally exhausted, and that which was last obtained was so impure as to be worthless. Quite recently a company was formed that revived the working of the mines and the purifying of their products, but after several years of labor and the wasting of about £20,000 sterling, it was utterly abandoned.

Since that time discoveries of graphite deposits have been made in different parts of the world; for instance, in Ceylon, Greenland, California, France, Italy, Granada in Spain, in various parts of Germany, in Canada, the New England States, and in New York, but none of them have as yet furnished a material for pencil-making at all to be compared to that from the old exhausted English mine.

It was not until the Siberian mines were discovered by ALIBERT, a Frenchman, that, after a labor of seven years, requiring the blasting out of hundreds of tons of granite rock, and an immense quantity of inferior and impure graphite, similar to that found in so many localities, unbroken layers of pure, splendid graphite were found in lumps of a hundred pounds weight, fully equal to the best specimens of the old English mines.

EXPLORATION OF LOWER CALIFORNIA.

An important and interesting scientific reconnoisance of the peninsula of Lower California was made last year, under the direction of Mr. J. Ross BROWNE, who organized a party in San Francisco, consisting of Mr. WM. M. GABB, of the State Geological Survey; Dr. F. VON LÖHR, of the School of Mines of Freiberg, and a corps of assistants. The results of the expedition have not yet been published. Mr. BROWNE and his party landed at Cape St. Lucas, from which point they proceeded by the coast trail to San Jose del Cato; thence through the valley of the same name to the mining district of Triunfo, near the town of San Antonio. Here they spent several days examining the mines; after which they visited La Paz and Pichiluique on the Gulf of California. At La Paz they had an interview with Governor PEDRIN on the subject of the proposed colonization of the territory by Americans. The general feeling of the people on that subject seemed to be favorable; but no encouragement was given to the project by the officers of the Mexican Government then in power. Judge GALVAN, who has since become Governor of Lower California, is not considered inimical to American occupation; and the probability is, he will use his influence to promote the settlement and development of the territory, should he be permitted to remain in power, which is questionable. On returning to Triunfo, Mr. BROWNE and his party procured an outfit of jack-mules and saddle-animals, and crossed the peninsula to the Bay of Todos Santos. From that point, they made a dreary journey up the coast to the Bay of Magdalena. Water is scarce along the trail, and the country presents but few attractions, having an almost uninterrupted desert, of sand and rocky masses, sparsely covered with cactus and thorny shrubs. At Salado, an isolated water-hole, seven miles from Magdalena, the party camped to recruit their animals. Several days were spent in visiting the neighboring shores of Magdalena, but no water was found nearer than Salado, and the whole country seemed to be without resources. Two whale-ships lay at anchor, from which Mr. BROWNE procured a boat and crew to make an exploration of the Bay. Dividing his party, he started the main branch of the expedition across to Loreto, and thence, as experience and the object of the reconnoisance might suggest, northward through the peninsula to San Diego. Having made a careful examination of the Bay of Magdalena and its shores, and gathered material for an interesting report, Mr. BROWNE crossed the peninsula again, via San Hilarie, to La Paz, where he remained a short time, revisiting Pichiluique and the Triunfo. Returning thence to Cape St. Lucas he crossed the Gulf to Mazatlan, and from that point obtained passage in the government steamer Shawnee to San Francisco. The results of Mr. BROWNE'S exploration will shortly be published by the Messrs. HARPER, with illustrations and accompanying papers. His forthcoming official report, on the mineral resources of the States and Territories West of the Rocky Mountains, contains a very interesting and valuable contribution on the geology of the country, from the pen of Mr. GABB, who, with his party, crossed the peninsula ten times, making the entire trip from Cape St. Lucas to San Diego on mule-back. As this is the first and only scientific reconnoisance ever made of the peninsula of Lower California, the account from Mr. GABB, the publication of which we begin this week, under the head of Original Papers, will be found of great interest and value.

SHEFFIELD SCIENTIFIC SCHOOL.

Our attention has been lately called to this deservedly successful branch of Yale College. The Sheffield Scientific School was established in the year 1846. As a result of the munificence of private and public benefactions, it has been gradually increasing, enlarging, and perfecting its various departments of study and investigation, until, at the present time, it ranks among the foremost of our schools of science. With its distinguished corps of professors, well-equipped laboratories, fine mineralogical, geological, and metallurgical collections, and well-selected libraries, it offers inducements to the scientific student equal to those of any other school of similar character in our country. At the close of the first year's course of instruction the student is allowed, for his two following years of study, to select from seven parallel courses, thus enabling him, with a certain definite object in view, to concentrate all his energies in its attainment. These parallel courses are chemistry, civil engineering, mechanics, mining and metallurgy, agriculture, natural history and geology, and a select course in science and literature. Those wishing to pursue any of the above branches can certainly find no better opportunity in this country than at the Sheffield Scientific School.

Ben Trovato.

DR. AYRES, the well-known chemist, was the subject of a good story told us the other day by a friend from Missouri. During his experiments in this city some time ago with his new ore-reducing apparatus, he was visited by a quiet looking, but, as it afterwards turned out, quite scientific German (called a Dutchman by the Dr.,) who desired to learn more of the great process that was to revolutionize the science of Metallurgy. The Doctor hastened to explain it, and spoke in glowing terms of its infallibility, and the astonishing results which it had already achieved, or was soon to achieve. The stranger heard him through, and, wiping away the Doctor's arguments, which stood represented by big drops of perspiration on his forehead, shook his head and remarked: "Jah wohl, Doctor, that is all very goot. But the minerals are not so flexible as the stomachs of the human beobles, sir! You will find him out, sir, with the time! The Jerry Bectoral will not remove the imburities of the ores, sir, like the blood!"

Certainly the "Dutchman" was to some extent correct. The Doctor has apparently abandoned his experiments with refractory minerals, and gone back to deal with what he understands much better—the "flexibility" of "the stomachs of the human beobles." We cannot vouch for the particulars of this anecdote; but the opinion of the gentleman from Germany we think we can endorse as true, whether he said it or not.

Missouri Tin.

Mr. A. R. ROESSLER, the Geologist of the General Land Office, at Washington, has examined some specimens of the tin ore of Missouri, sent from that State to the office, and communicates to us the following results. The material sent consists of two kinds, a vein mineral, and "wood" or "stream tin." The former, he says, consists of a very small quantity of oxide of tin, associated with manganese and tungstate of IRON, and contains so small a proportion of the metal as to be practically useless as an ore; the latter, with the usual wood structure of stream tin, yielded from four to six per cent. of metal. We have no reliable data as to the extent of the deposit, but from the accounts that have been published, fear that it is of more interest to the mineralogist as a new locality of a rare substance, than to those interested in the production of tin for commercial purposes.

For Colorado.

We have just been favored with a call from Dr. P. H. OETTINGER, who leaves on Monday, the 18th inst., for the mining districts of Colorado. The Doctor has had a large experience during the past five years in the Scientific Schools of Germany. He devoted two years to a thorough course of practice and study in the all-important subjects of Mining, Engineering, and Metallurgy. Several extended tours of observation have also made him familiar with the practical working of most of the important mines and smelting works of the old country. We therefore bespeak for him, in his destined field of labor, a career of distinguished usefulness.

Answer to a Correspondent.

A correspondent from Golden City, Colorado, writes us: "Sand is plenty here, and I want a composition which costs nothing to make it stick on the buildings." We do not know of any such composition; they can never be obtained other than at the cost of labor. The cheapest cost considerable, when required in large quantities.

Vermin in the Gold Regions.

We hear that of all localities, Virginia City, Montana Territory, is the most infested with bed-bugs, that every crack of every house is full of them, and nobody can sleep quietly except those who do not mind being "bitten." Whole houses are now being torn down and rebuilt solely on that account.

NEW PUBLICATIONS.

COLORADO, THE ROCKY MOUNTAIN GEM.—This is the rather poetical title of a pamphlet by NED E. FARRELL, upon Colorado, which we have lately received. It is published by the Western News Co., Chicago, and written in a racy serio-comic sort of a style. Taken altogether, it is rather an interesting little work. Having a smack of the pioneer in its language and style, it is dedicated to the pioneers of the Rocky Mountains. They cannot fail to appreciate the compliment, neatly paid them, in its few lines of dedication.

The pamphlet first tells us of the geography, climate, mining interests, and early settlement of Colorado. It then goes on to tell us more in detail of the natural resources of the various counties that make up this "Mountain Gem," and finally concludes with a discussion of the questions of "Quartz Mining," "Colorado Coal," Agriculture, Rules and Laws relating to Homesteads, etc. As an instance of the happy vein in which the author wrote his work, we cannot forbear to quote the following from the paragraph entitled "*Hints for All.*" This is the valuable advice therein given:

"Find out where you want to go before you start. Buy your ticket at the regular ticket office, and thus save trouble for yourself, and insure the company against dishonest conductors. Check your baggage through to its destination. Pay no attention to hotel runners or other polite gentry, who are anxious about your welfare, on your arrival in a town. If you wish any information, inquire of a policeman. Stop only at good hotels, and you will make money by it."

In speaking of the coming fate of the Indian, we are treated to a burlesque upon a couplet, well-known to us in our schoolboy days, as one of the most prominent in the old English reader:

"The march of civilization and progress is not to be stayed by

> 'Lo! the poor redskin, whose unscrupulous mind,
> Leads him to steal your stock, and leaves no hoof behind.'

"Not much! Young America is out there, with his boots on, prepared to wade in; and my private advice to Mr. Indian is, in the vernacular of the plains, to 'git up and git!' or behave himself."

We find the following *pro's* and *con's*, in the paragraph upon "*Odds and Ends*," at the close of the pamphlet. Making due allowance for the pleasantry of the writer, we get, in a nut-shell, the gist of the whole matter:

"Colorado has neither State prison or lunatic asylum. No navigable rivers or swamps. No poor houses or paupers. No chills and fever or hay stacks. No drenching rains or deep snows. No hostile Indians or horse railroads. No mud but plenty of rocks. No old maids and but few young ones. Plenty of young America and enterprise. No circuses, but the best collection of natural curiosities in the world. No millionaires, but plenty of material to make them. No Central Park, but a dozen large ones, where that could be hid away out of sight. No cheese factories, but plenty of room and need for them. No woolen factories, but plenty of wool. No gas works, but abundance of coal. No World's fair, but the ores that took the premium at Paris. No cholera, yellow fever or other pestilence. Some fleas, bedbugs, and grasshoppers, few mosquitoes or house flies. No fire engines or insurance drummers. Altogether, it is not the worst country in the world, nor perhaps the best; if it was, every body would want to live there, and that would make the folks too thick; but certain it is, that those who are prepared to judge, by having traveled in other countries, give Colorado the preference in many respects over any and all."

QUARTZ OPERATORS' HAND-BOOK.

This is a neat little pocket volume published by Messrs. Wheeler & Randall, of San Francisco, for the purpose of advertising their Amalgamating Machinery, which it does very satisfactorily. The greater part of the book is occupied with an abstruse discussion of the tractory curve and conoid, involving the calculus, and possessing little value to the engineer; since the claims of the tractory conoid as a form for grinding plates do not, after all, rest on theoretical formula, but on certain practical conditions involved in grinding ores. We think the mathematical discussion betwen Mr. RANDALL and Mr. GOODYEAR, in which each discovers the blunders of his opponent and is obliged to admit his own, is as lively as the subject will admit. Naperian logarithms and imaginary directrices are almost too shadowy to be used as shillelaghs in a fight.

The rest of the book contains numerous practical and simple maxims, formulæ and tables for mill-men, and full accounts of the machinery manufactured by the firm we have named. As we expect to illustrate and fully describe in detail these machines in future issues of the JOURNAL OF MINING, we will not speak any further of them at this time than to remark that they are used and commended by many extensive miners and mill-men on the Pacific coast, and are now attracting the attention of Eastern companies. The Highland Gold Company has, among others, we believe, purchased several, through Messrs. MOREY & SPERRY, of this city, for their mines in Montana. The book may be obtained by addressing any of the parties mentioned above, at 95 Liberty street.

Rates of Freight and Tolls on Coal by the various Railroads and Canals to tide-water, comparative rates of freight, &c. Samuel Bonnell, jr., Publisher, 111 Broadway, N. Y.; Paul A. Oliver, Compiler.

A very neat and comprehensive pamphlet, containing a great quantity of information that every coal dealer should have for the more economical management of his business. Mr. Oliver deserves much credit for his labors.

A CATALOGUE OF THE OFFICERS AND STUDENTS OF THE UNIVERSITY OF MICHIGAN, for 1867–8, has made its appearance on our table. It shows the University to be still pursuing its almost unexampled career of prosperity. The number of pupils in the department of Science, Literature and the Arts, the past shool year, number 418; in the department of Medicine and Surgery, 418; and in the department of Law, 387. The whole number in attendance at the University in all its departments, was 1,223. And it would seem that in making up this summary, no name has been counted more than once, and none inserted where the individuals have not been actually present upon the spot as students.

THE AMERICAN JOURNAL OF SCIENCE AND ARTS, for May, has among its numerous articles, several of an interesting and valuable character. To those who have a special liking for the musical art, the paper "On the Musical Ratios, and our Pleasure in Harmonious Sounds;" by HENRY WARD POOLE, will be read with a good degree of interest, i. e., if the bent of their mind is sufficiently scientific. To the mineralogist, "F. A. Genth's contributions" will probably be the most inviting article contained in the number. The papers upon geological subjects, present many interesting features. Prof. F. V. HAYDEN, a very successful field geologist, furnishes some "Remarks on the possibility of a workable bed of coal in Nebraska," and among others, he makes the following important statements. He says "that it has been accurately determined that the rocks of the carboniferous period occupy only a small portion of Southeastern Nebraska, and that these rocks are of the age of the upper coal-measures; that it seems more than probable that coal in paying quantities, will never be found within the limits of the State of Nebraska."

The conclusion arrived at by the distinguished geologist, must certainly be very unacceptable to the inhabitants of that State, since the State itself is almost wholly one vast prairie, destitute of timber. C. A. WHITE, M.D., on the "Character of the Unconformability of the Iowa Coal-Measures upon the Older Rocks," gives us some interesting conclusions in regard to the geological history of some of the Iowa limestone rocks.

THE GALAXY *for the month of June.*—We find this magazine, to-day, upon our table, and upon turning over its leaves are more than pleased with its comely appearance. This fine literary periodical is now entering upon the third year of its existence, and judging from its past experience, we argue for it in the future a brilliant career. It has been continually growing in size, as well as in the solidity of its reading matter, and we are glad to be able to say, that during the past two years it has been favored with a con-

stantly increasing circulation. The beauty of its engravings, clearly attest that this very essential part of a truly popular magazine, has not been neglected. As we glance our eye over its pages, we are struck with the "capital hits" that have been made in the selection of points that are considered worthy of delineation by the pencil of the artist. Among the leaves of this fresh, green literary field, we find scattered here and there a poetic blossom. Such gems are to stately prose, what isles, ever green, are to the sea—what oases are to the arid sands of the desert.

The article "On Railway Management" argues very bravely the necessity of a thorough change in our present railway system. It makes a very fine comparison between the management of the railways of the present day, and that of the country roads during the time of the middle ages, when the old barons had everything their own way. Whether it would be possible for the Government to buy up all the railways, as suggested by the writer of the article, etc, and then run them, to the advantage of itself and the public good, we will not undertake to say; but we do know that there is great necessity for a radical change. It is, as the article suggests, "one of the duties of this age to reform its administration of affairs so as to suit the growth of its industrial energy; and one of the most pressing necessities is, that the railway shall be made useful to the public, instead of a monopoly in the hands of a few; that as it is an evidence of productive industry and an aid to it, it should be managed so as to fulfil its purpose, instead of being, as now, a mere set of counters in the hands of the gamblers of Wall street."

Original Papers.

[MS. FURNISHED TO THE AMERICAN JOURNAL OF MINING BY HON. J. ROSS BROWNE.]

NOTES ON LOWER CALIFORNIA.—NO. I.

BY W. M. GABB, ESQ., PHILADELPHIA, LATE OF THE CALIFORNIA GEOLOGICAL SURVEY.

INTRODUCTORY LETTER.

J. Ross Browne, Esq.:

In accordance with your request, I herewith submit a short account of the geographical and geological features and the resources of the peninsula of Lower California. My information is entirely derived from personal observation during a reconnoissance of some four months of this year, in which, with my party, I travelled upwards of eighteen hundred miles in the territory, visiting almost every spot of interest, and crossing from coast to coast no less than ten times; making in all a journey of nearly two and a half times the actual length of the peninsula.

Accompanying the report is a copy of a map, made by Mr. F. von Lohr, my travelling companion, which will convey a more accurate idea of the country than any other heretofore published. This map, based on those which we found most accurate, has been carefully corrected by his own surveys, and checked from time to time by latitude observations, so that, though doubtless still containing many trifling faults, it is perhaps the first map of Lower California ever prepared that even approximated to correctness of detail. It will prove a valuable addition to geographical science. The coast lines on the the Pacific side are mostly taken from the corrected chart prepared by Captain C. M. Scammon, as the result of many years personal acquaintance with the region, and was here, for the first time, put into such a form as to be available to the public. They are far more reliable than the chart of Imray, used by all mariners navigating these waters. I would also call particular attention to the fact that two large and important bays—Scammon's Lagoon and another opening into Ballenas Bay—are here laid down for the first time.

Without specifying any more, it will suffice to say that, besides these, many other important corrections have been made, which will be detected on comparing this with any other map published up to the present time.

Trusting that not the least important result of our journey, will be to awaken some interest in this long neglected, but really valuable territory,

I remain very truly, your obedient servant,

W. M. Gabb.

San Francisco, California, June, 1867.

GEOGRAPHICAL AND PHYSICAL FEATURES.

The Peninsula of Lower California extends from the twenty-third to near the thirty-second degree of north latitude, about 775 miles in a direct line, and varies in width from abou thirty-five miles in its narrowest part, to more than twice that where it is widest. Bounded on one side by the Gulf of California and the Colorado River, and on the other by the Pacific Ocean, it has a coast line greater in proportion than almost any tract of similar area in the world. Nor is this all; owing to its extremely irregular outline, this coast is almost a succession of bays, harbors and roadsteads, furnishing convenient depots for the numerous whalers who resort here.

The general impression seems to have been that the whole peninsula was a mass of rugged mountains, dry, barren and desolate. This is by no means the case; there are mountains, and a large part of the country is dry and desolate enough, but it has many redeeming features, and wherever water exists its fertility is astonishing. That portion lying south of La Paz is by far the roughest, has the highest and most rugged mountains, the deepest valleys, and is in all respects the most picturesque. The San Lazaro chain starts as low hills near Cape San Lucas, and running north and north-east, culminating in the peak of San Lazaro perhaps five thousand feet high, falls near Triunfo to not much more than a thousand feet, and continuing north-east again, rises in the high and frowning masses of the Cocochilas making a most imposing background to the beautiful town of La Paz, as seen from the bay. Small spurs run out from the San Lazaro chain down to the west coast; while eastward, spurs and nearly parallel chains fill in the whole area to the eastern coast. Beautiful valleys nestle among these mountains. The valley of San Jose del Cabo runs northward, east of the high mountains, about twenty miles in length, much of it in a high state of cultivation, and with much more that could be easily rendered arable at trifling expense. Other valleys, smaller in size but similar in most respects, occur, scattered here and there, and even on the summit of the high spur known as the Sierra de la Victoria is said to be a long chain of little valleys with the richest of soil, finest of grass, a superabundance of clear sweet mountain water, and bordered by groves and forests of oaks and pines.

North of this granite mass, and extending with some trifling breaks to Sta. Gertrudis or San Borja, lies a belt of table mountains of sandstones. These, almost everywhere, commence on the west coast as broad plains, rising towards the northeast so gradually, that, were it not for their being cut by innumerable canons which show their steadily increasing height, one might still believe himself to be but a few feet above the ocean. The regular elevation of the tables continues to within a few miles of the gulf, when a sudden descent cuts them off with a face so precipitous that, except in a very few places, it is impossible to find a pass by which to reach the coast. Seen from the west side, the mountains look like a sea of flat tables, barren and covered with loose stones; while from the eastern face, they are steep, rugged and so serrate as to lose, entirely, their tabular form. On this side, and adjoining the coast, are some good little valleys.

South of Loreto, for perhaps twenty miles, is a tract of level land bordering the coast, and often a couple of miles wide, most of it covered with a fertile soil. Further north, at San Bruno, at San Juan, and again south of Molejé, are broad valleys forming bays in the hills, from three to ten square leagues in area, and all excellent land, only requiring water to be brought to the surface, to render them valuable. On the west side adjoining the Pacific, is a plain from near Todos Santos to the north of the Arroyo of Purissima, about 150 to 200 miles in length, and with an average width of perhaps ten miles, more than half of which is covered with good fertile soil, but without water. In the various canons which cut the mesa lands, encroaching on this plain, are little valleys of from a few acres to several square miles in extent, usually well watered and some of them in a high state of cultivation. Further north, between the bay of Ballenas and San Sebastian, the plains exist again, merging into mesas on the east. but separated from the sea by a range of granite mountains, parallel with the coast, known as the Sta. Clara range. Still further north, these plains continue with occasional interruptions to Rosanto, when they are cut off by the rolling mountain masses reaching the west coast. These northern plains are, however, for the most part deserts, though a portion could perhaps be reclaimed.

Near Moleje, the eastern side of the range undergoes a change. The abrupt eastern face falls, to some extent, and retreats from the coast, the intervening space being filled with rolling hills or barren transverse ridges, almost to Sta. Gertrudis. In this space is the high volcanic mass of Las Virgenes, nearly four thousand feet high, and running westward, from it, to near San Ignacio, is a succession of irregular peaks and ridges of volcanic origin.

By the time the traveller has gone a day's journey north of Sta. Gertrudis, he will observe a change coming, in the form of mountains. The heavy sandstone beds that formed the mesas begin to thin out, only capping some of the higher hills, the others being peaks, ridges and spars of granite with the irregularity of outline which usually characterizes that rock. This transitionary state continues for the next hundred miles, to San Borja, beyond which the range on the east side splits, sending off a branch of low hills to the northwest, the main chain continuing along the east coast. This latter chain continues, high, rough and forbidding, to Santa Maria, beyond which it extends as a low range of lava-capped granite hills of constantly diminishing altitude, until it is lost in the desert of the northeast. In the mean time, the spur which started from San Borja, as a chain of partially isolated hills, becomes more marked near the coast and, after passing San Andres, it assumes very respectable proportions, growing larger and higher, eventually occupying half the width of the peninsula and connecting with the coast ranges of upper California. East of this, and north of Santa Maria, the country is represented to be mostly a sandy desert, with some scattered fertile spots. Scattered through the western foot hills, and along the peaks of the range bordering the Pacific, are many beautiful and fertile valleys which will be mentioned, more in detail, further on.

[TO BE CONTINUED.]

Scientific Meetings.

POLYTECHNIC BRANCH OF THE AMERICAN INSTITUTE.

TRINITY CLOCK—RESTORING OLD LEATHER—SCIENCE ONE HUNDRED AND FIFTY YEARS AGO—FOSSIL SHARK'S TOOTH—LONGEVITY—SCIENTIFIC NEWS' SUMMARY—NEW METHOD OF COPYING LETTERS—IRON ROADWAY FOR STEAM CARRIAGES ON BROADWAY—DISCUSSION OF VARIOUS PLANS PROPOSED.

The usual weekly meeting of the Polytechnic Branch of the American Institute was held on Thursday evening last at Cooper Institute. Prof. S. D. Tillman occupied the chair. At the opening of the meeting a few sharp words were indulged in by some of the individuals present, in regard to the merits of Trinity church clock, which seemed to cast something of a reflection upon Mr. Rogers, the manufacturer of the aforesaid time-piece. Bruno Smith then read to the audience a short paper upon a method that he has invented for restoring old leather to its originally soft and pliant state. He claimed that by his method of treatment old articles of leather, such as hose, harness, &c., could have their strength increased by at least 50 per cent. The question arose as to whether the loss of strength in the original leather was not the result of the decay of its fibre. If so, this new process could not be of any practical moment. It amounted to nothing more than a cleansing of the leather. It could not reconstruct the original tissue.

Dr. Smith, formerly of the Medical College, of Boston, was then introduced, who said that he had three subjects, in the presentation of which he wished to occupy a few moments, and hoped his words would not prove uninteresting to his audience:

1st. He said that he had come across a very singular matter of record, which showed the condition of science about one hundred and fifty years ago, in England.

It seems that a Mr. White, an English astronomer, calculated the return of a comet upon a certain day, near at hand, and, furthermore, as a result of his scientific researches, he argued the destruction of the world upon the Friday following the return of the celestial wanderer. Great consternation fell upon the people. In masses they took to their boats upon the river, thinking thereby to get a little longer lease of life in the general conflagration. The comet came. This confirmed, as it were, the prediction that on Friday the final hour would come. Great was now the terror of the miserable mortals who saw death looking them square in the face. A deputation of clergymen proceeded to Lambeth to petition for a new prayer, as in their collection, they had none suited to the need of the time. There was a great run upon the Bank of England; three Maids of Honor burned the libraries, and last, but not least in the category of fooleries found in this old record, we are told that on Thursday, seven thousand marriages took place—the parties to which, were those who had been living together in conformity to natural—but in non-conformity to civil—law.

2d. Dr. Smith then exhibited a shark's tooth, some six inches long and four inches broad at the base. He judged that the animal must have been from 80 to 100 feet long. He gave a short dissertation upon the nature of the shark, saying that it was the scourge of the seas, that it seemed to be its mission to keep down the too great multiplication of the other oceanic races. He spoke of fossil shark's teeth, as having been found upon a point on the coast of Massachusetts, near Cape Cod, 200 feet above the surface of the present level of the ocean, and also of their having been dug up in the marl pits of New Jersey. The tooth exhibited was said to have been dug up near Richmond, Va., about fifteen feet below the surface of the ground. Dr Feuchtwanger, in allusion to sharks afterwards remarked that fossil teeth were found in all parts of the world, and in almost every geological period from the Silurian up to the Alluvial of the present day.

3d. Dr. Smith then spoke of longevity as an inheritance. He said that he believed in it; he would not discuss the subject at present, but he would present some facts that he had collected, in regard to people who had lived to a great age. He told of a French convict who was condemned at the age of eighteen years, in the year 1724, to suffer imprisonment for the term of 100 years. The convict served his time, was discharged, travelled on foot to Lyons, and laid claim to an estate that belonged to him, and in settlement therefor he received the sum of 4,500 pounds. Among other interesting cases was that of Donald McDonald, who at the age of 107 years was sent to the House of Correction for disorderly conduct, and afterwards, at the age of 137, came to a premature death, by falling down stairs. Another case was mentioned, of a Russian, who lived to the great age of 168 years; he married for the third time at the age of 93 and lived in all the enjoyments of matrimonial bliss with this third wife, for a period of fifty years! Another case was mentioned of a man, who, at the age of 169, testified in court to an event that took place 140 years before!

Some physiologists and anatomists think that whales often live to be a thousand years old. Dr. Smith thought that the long-lived transmit their vitality.

Dr. Edwards then remarked that he was glad to see the subject of longevity again brought up; that facts were necessary to progress, but we must be careful and not stop with the mere facts. Why is it, he asks, that men die when they have within them the elements of long life? The answer is that they die of inherited disease.

After this followed a reading of the summary of scientific news. Among the items was one in regard to a new discovery or invention for copying letters. It was done by means of using a sympathetic ink. The old style of press, brush, &c., would be no longer necessary.

Mr. Fisher then read a paper, in which he discussed somewhat at length a plan of a roadway to relieve the travel of Broadway. He proposes, as more economical, effectual, and safer than either the underground, arcade, or inter-street plan, the laying of an iron-roadway, and the running upon it of steam-carriages.

After the reading of this paper, a somewhat random discussion followed upon the merits and demerits of the various plans that have been proposed for quick transit, from the lower to the upper part of the island.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

A New Lead Mine.

New York, May 5, 1868.

Editor American Journal of Mining:

In making a trip through the northern part of this State in the autumn of the past year, an accidental circumstance brought to my knowledge the fact that in the neighborhood of the hotel where I was stopping for a day or two, a lead mine had been discovered a year or two previous. As I am one who takes something of an interest in matters that touch upon geology, mineralogy and the like, I was very glad to embrace a convenient opportunity and visit this newly discovered deposit of lead ore. The general appearance of this mine, as nearly

as I can remember, was about as follows: The vein appears, where it cuts the surface of the ground, to lie in the so-called metamorphic rock. It runs in a northerly and southerly direction, and seems to strike into the crust of the earth in a very nearly perpendicular direction. It lies only three or four miles from railway communication, in the midst of quite a rich agricultural district. The vein has been laid bare on the surface of the ground a distance of some five or ten rods. It is well defined, and has a width where it "crops out" of from two to three inches. The mine was discovered, I was told, where it was crossed by an ordinary pathway upon the farm. The wear of travel had exposed the vein to atmospheric influence, and the discoloration that resulted therefrom naturally attracted attention. At the time of my visit, I found that a shaft had been sunk upon the vein to the depth of about fifteen feet; it was just then full of water. I was informed by trustworthy parties, that at that depth the vein was some two or three times its width upon the surface of the ground. From some specimens that were shown me, and from the character of the refuse matter lying around upon the ground at the mouth of the shaft, I found that the vein was made up of the following minerals, viz.: lead ore, or as it is commonly called, galena, zinc blende, iron pyrites and quartz. The predominating mineral of the vein was galena, though it was sprinkled quite freely with zinc blende. I was told that the ore was quite rich in silver. I believe there are other lead mines in that region of country that have been worked somewhat, at a place called, I think, Rossie.

Now, Mr. Editor, I wish to ask you or any of your scientific contributors one or two questions in regard to this deposit of ore. In the first place, I wish to know if one would naturally expect to find other veins in the immediate vicinity, and if so, under what conditions? Secondly, would one come reasonably to the conclusion that as the shaft is sunk deeper and deeper along the vein, the latter will be found to increase correspondingly in width, so that at the depth, say, of 100 feet, it would be found to have a width of several feet? Thirdly, what would be the effect in smelting the ore of the impurities so intimately mixed with it; or, in other words, would the zinc blende be a serious obstacle in the way of smelting the galena for lead? Lastly, would it be advisable for one to spend any considerable amount of money in opening this vein in the expectation that in the end it would prove a profitable investment? In the hope that, through the columns of your very able journal, we shall soon receive an answer to our interrogations, we remain truly yours, H. L. S.

☞ Attention is called to the advertisement of J. C. HOADLEY & Co., in our paper. Their portable Steam Engines are used in all parts of the country, and are highly recommended by those who have tested them.

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77,469.—PROCESS OF CONVERTING CAST IRON INTO CAST STEEL AND MALLEABLE IRON.—Francis Ellershausen, Montreal, Canada East.

I claim, 1. Converting cast or pig iron into cast steel or malleable iron, by bringing it, in a liquid state, in contact with hot or cold solid oxides, substantially as herein specified.

2. Bringing to an instantaneous uniform contact, at a sufficient heat, on a sufficiently large hot or cold surface of pure oxide, the carbon contained in molten cast iron, so as to cause a rapid violent combustion of the carbon, substantially as described.

77,470'—MATERIAL FOR PURIFYING AND DECOLORING PETROLEUM.—John Ellis, New York, N. Y.

I claim, 1. The method of preparing bones, animal charcoal, "Navassa phosphate of lime," and other phosphatic deposits, in the manner described in the foregoing specifications, as materials for filtering and bleaching petroleum and other fluids.

2. For the purpose of filtering and bleaching petroleum and all the fluids produced from it, including residuum and the heavier oil, after the lighter fluids have been separated from it, the use of pure phosphate of lime, and the commercial article, and also either and all, separately or combined, of the materials or substances which result from treating bones, animal charcoal, Navassa phosphate of lime, or other phosphatic deposits, in the manner described in the foregoing specifications.

Special Scientific Brevities.

☞ It may not be generally known that iron vessels, built on stocks pointing nearly north and south, become highly magnetic, and are, in fact, mariners' compasses on an immense scale. This effect is due to the vibration of hammering the iron when in this position. A common poker treated in the same way will readily become a magnet. This curious fact was recently illustrated by the British ship of war Northumberland. Having been built with her head pointing north, her compass showed great deviation. By docking her, however, with her bows pointing south for some time, it was found that this defect was greatly reduced, and it may be in time wholly neutralized.

☞ Some parties in Philadelphia have been manufacturing a letter-press copy book for taking instantaneous copies of manuscript, which are found to answer in the best manner the purpose for which it is intended. A sympathetic ink is used with the paper of such a consistency and character that when a page of manuscript is written, by placing it under a leaf of the book and rubbing the hand over the paper, an excellent copy is obtained. It is a valuable aid to business men heretofore accustomed to the irksome process which requires a wet brush, absorbing paper, a press, and some patience.

☞ Experiments made with toads by Gratiolet Goletz and vulpian prove that matter is exuded near the ear which is poisonous when introduced into the tissues of other animals. Dogs, after biting a toad, show sighs of pain But the bite of the toad is not poisonous. It is said some Indians in South America use a fluid obtained from the back of the toad, in place of curara, for poisoning the tips of their arrows. The ordinary toad may be handled with impunity, but should the secretion alluded to come in contact with abraded skin unpleasant sensations might ensue.

All Sorts.

☞ In the process of making paper from wood, as practiced in Europe, round disks of wood are first subjected to the action of hydro-chloric acid to dissolve the spongy cellulose. This latter has, until lately, been a waste product, but is now converted into alcohol in this way: The wood is boiled for twelve hours in hydro-chloric acid, diluted with ten times its volume of water. The acid liquid, which is charged with grape sugar formed from the spongy cellulose, is then withdrawn, the excess of acid saturated with lime or chalk, and a small quantity of yeast is added, the temperature being kept at about 68° Fahr. Fermentation soon ensues, and when bubbles of carbonic acid gas are no longer evolved the liquid is distilled to obtain the alcohol.

☞ Advices from Alaska to April 10 have been received. There were twelve marine vessels there in four weeks, including three steamers. The departures for the same time were three steamers, one sloop, one bark, and two schooners. Nearly all the arrivals brought passengers. The business at Sitka is steadily advancing, and several new buildings are going up, and the town presents a busy and thriving appearance.

☞ Renaudet, a French physician, found that the gossip communicated by him from one to another of his patients, cheered and ameliorated their condition, and he accordingly conceived and carried out the idea of printing a daily bulletin, to circulate among and amuse the sick and infirm. This was the origin of newspapers in France.

☞ A hail-storm at Bushnell, Ill., last Friday night, is described as resembling a shower of snow balls, some of the hail stones measuring thirteen inches in circumfererence and weighing over nine ounces. Skylights were dashed into fragments, and unsubstantial roofs somewhat riddled.

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may16:4t WILLIAM B. ROGERS, President.

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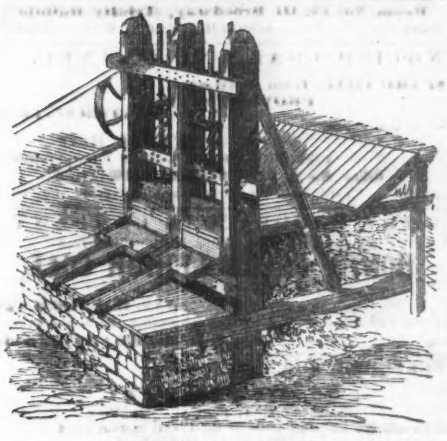

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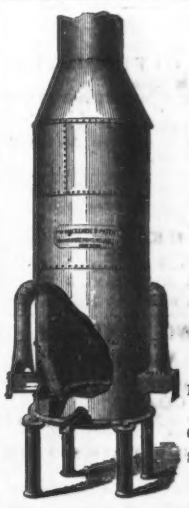

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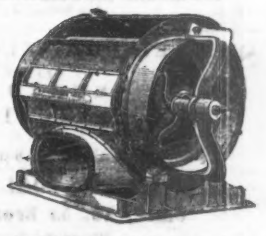

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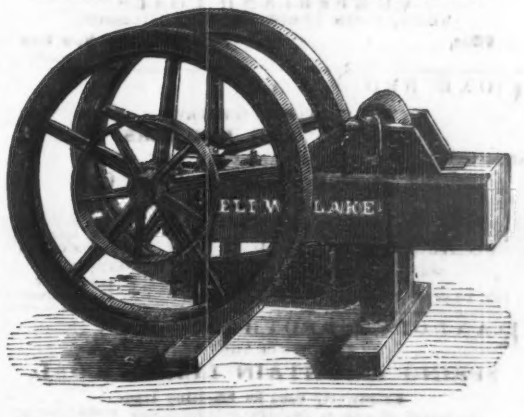

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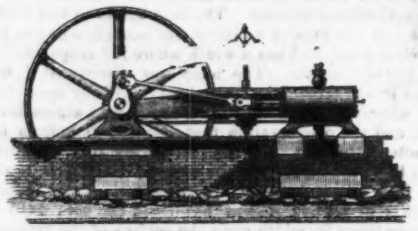

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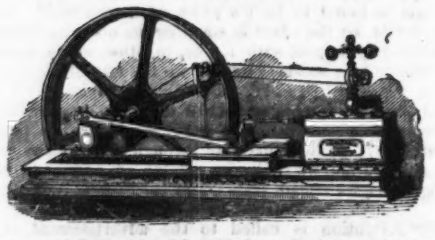

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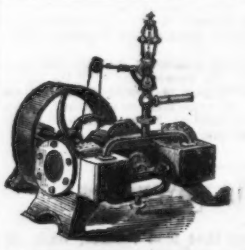

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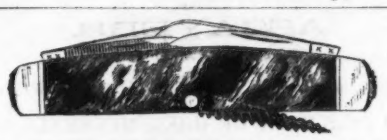

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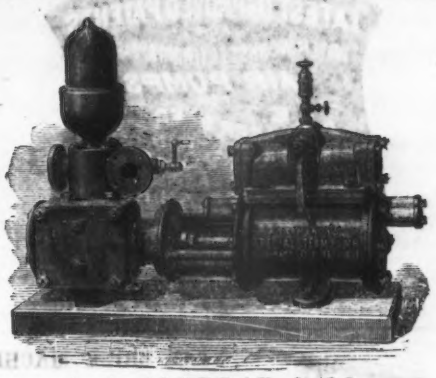

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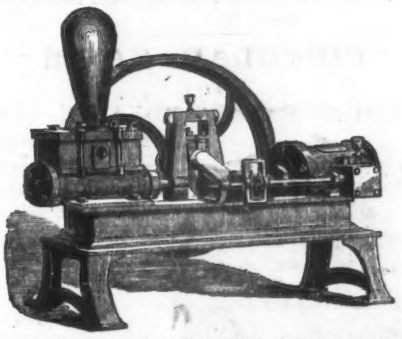

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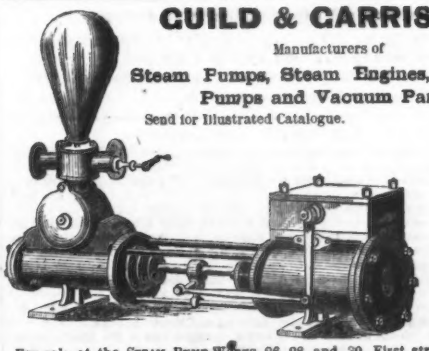

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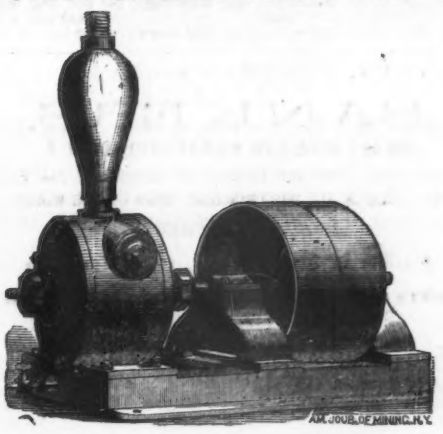

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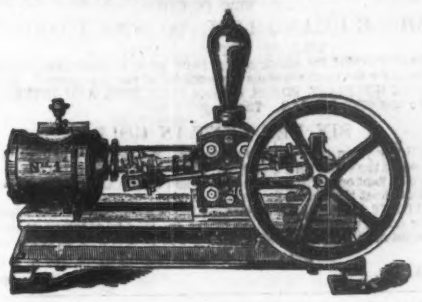

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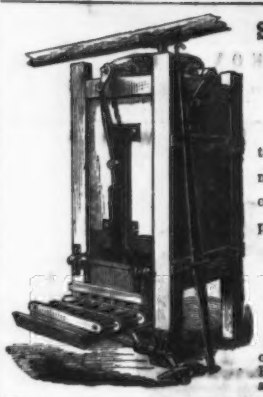

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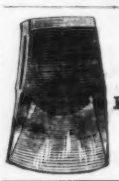

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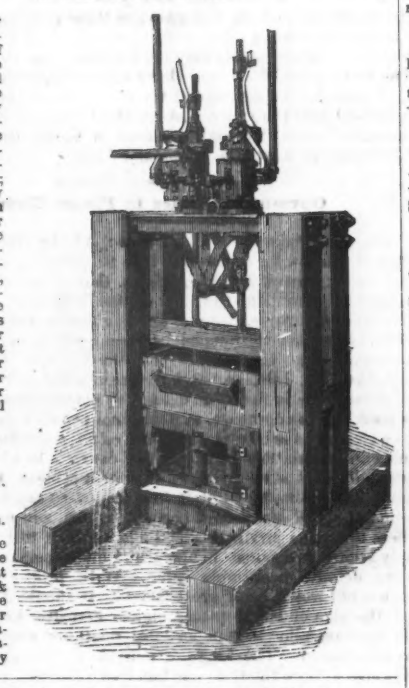

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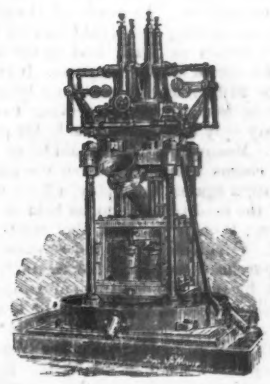

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Manufacturing and Mechanical Notes.

No. XX.

PRESERVING POLISHED STEEL FROM RUST.

It is said that nothing is equal to pure paraffine for preserving the polished surface of iron and steel from oxidation. The paraffine should be warmed, rubbed on, and then wiped off with a woolen rag. It will not change the color, whether bright or blue, and will protect the surface better than any varnish.

CEMENT FOR COAL-DUST FUEL.

One of the best cements for the agglomeration of coal-dust fuel is said to be that used in several continental establishments, consisting of coal tar, gluten, and starch. The quantities of these substances are altered according to the qualities and properties of the coal-dust; but they are very easily ascertained by a few experiments. About 2 per cent. of this mixture (containing, say 2½ parts of coal tar, 1 part of gluten, and one-half part of starch) would be suitable for coal-dust of an average quality of bituminous coal.

CEMENT FOR ATTACHING GLASS AND BRASS.

A resin soap is first formed by boiling 3 parts of resin and 1 part of caustic soda in 5 parts of water, and then mixing this with half its weight of plaster of Paris. This cement is said to be impervious to petroleum, only superficially affected by water, to adhere very strongly, and to be a bad conductor of heat.

PRESERVATION OF FLOWERS.

At several fairs of the American Institute dried flowers, in their natural colors and shape have been exhibited. Flowers thus perfectly preserved are now for sale in London shops. The process of preservation is this: A metallic vessel is provided with a movable top and bottom. The top cover is removed, and a wire gauze of moderate fineness is fitted into the top of the vessel, when the cover is replaced. Sufficient sand to fill the vessel is first sifted, and then placed in an iron pot with a small quantity of stearine—about half-a-pound to 100 pounds of sand. The mixture is heated, and carefully stirred, so as to equally diffuse the stearine. The first vessel is then turned upside down, the bottom cover removed, and the flowers to be operated on are placed in the wire gauze, after which the prepared sand is gently poured in so as to cover the flowers entirely, the leaves being thus prevented from touching each other. This vessel is then put in a hot place—such, for instance, as the top of a baker's oven—and left for forty-eight hours. The vessel is then taken out, and, while still bottom upward, the lower cover is removed, and the sand runs out through the gauze, leaving the flowers uninjured and dry, yet still retaining their natural colors.

Coal-Cutting by Machinery.

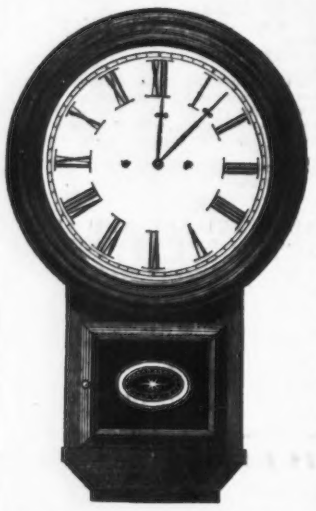
Mr. J. Elliot, of Southampton, has invented improved machinery for tunnelling and cutting coal, slate-rock, or other minerals, which consists of a circular rotating disc, either with teeth, or formed to receive movable tools of varied form, set in a slightly spiral line, in the direction of the forward cut; he removes the core produced by the forward cut by means of a crank-arm, connected by a pivot joint to the disc. The central axle, when in action, on which the cutting-discs revolve and advance, rests at one end in a bearing in or fixed to the substance to be cut into, and at the other end in a bearing borne either by wheels, or by uprights, or by cross-pieces resting on or let into the rock. When not at work, or for transit, the axle either rests at both ends on bearings borne by wheels, or the various parts can readily be transported separately. The cutting-discs revolve with and advance on the axle, so as to cut into the coal beyond the central axle bearing. The forward motion of the cutting-discs is ensured by attaching a chain to the arm, and carried over rollers, to secure the proper direction. The forms of the movable cutting-tools proposed to be used with the rotating discs are, by preference, triangular in plan and section, disposed in sets in a slightly spiral line in the direction of the entering cut, the advance tools being narrow in plan and deep in section, and followed by other tools gradually widening in plan and diminishing in section. In order to facilitate the release and removal of the core left by the forward cut, a cranked-arm or arms is or are connected by a pivot-joint with the cutting disc or discs, the portion of such arm which enters the cut having teeth or movable tools connected to it, which are put in operation by acting on the portion of the arm which remains without the cut; or the same result may be produced by a spindle and key acting on an arm carrying tools, and connected to the rotating disc. The above described machine may be fixed so as to work at any required angle, and two or more machines may be arranged so as to work in combination.—*London Mining Journal.*

Preserving Wood.

We have recently seen notices of the extended use of alkaline silicates in Germany for the preservation of building materials, both wood and stone. The latter application may be noticed here, with the remark that such a fire as that which recently occurred at Charing-cross Station, could not have happened if the woodwork had been protected by the means noticed. The cost is but small, and the immunity it gives from fire is complete. According to the expired, and almost forgotten, patent of De Wylde, the woodwork is first saturated with a very dilute solution of silicate of potash, as nearly neutral as possible, and when this has dried, one or two coats of a stronger solution are given. When lives are lost by fire almost daily, it seems strange that such means of protecting wooden staircases and flooring should be neglected.—*Ex.*

CLOCKS.

The annexed engraving illustrates one of the eight day Clocks manufactured by the Waterbury Clock Company, who are well known as celebrated makers of Clocks in all variety, and of all descriptions. The company have recently enlarged their factories at Waterbury, Conn., and having otherwise greatly increased their facilities for the manufacture of Clocks and Clock materials, are now executing all orders for these goods with promptitude. They are enabled to export their goods to foreign countries, besides meeting the great demand in this country. The leading varieties of clocks are made with cases of Rosewood, Mahogany, Iron and Bronze Cases. We could fill a column of our paper with a list of the different styles at the Company's Store No. 4 Cortland St. New York, but we may mention that there are all varietes from the one day Striking Spring Clock to eight day Iron, gilt and Pearl. We also noticed Vienna and Swiss Regulators, French, Bronze, Ormolu, and marble clocks with a large assortment of bronze brackets, figures, vases, busts, and match safes. As every householder as well as every business man knows, or should know the value of punctuality and a reliable time-keeper which always keeps "good time," we need only say to those parties who wish to be, "on time," purchase your ticking monitors from the Waterbury Clock Company, as these gentlemen, by their large assortment of plain and ornamental clocks, prove, that however dilatory others may be, *they* are "up to the times." The factories at Waterbury have a manufacturing capacity of 12,000 clocks per month, and the reputation of the Company is well established in every State in the Union, as it has been in operation since 1857 and is known in Great Britain, on the Continent, in Australia, China and Japan.



Government Titles to Placer Claims.

The San Francisco *Bulletin* says: At the time of the passage of the law for conveying title to quartz claims, the opinion was expressed in the *Bulletin* that it was practicable to extend its provisions to placer claims, with some changes, on the basis of a recognition of existing rights and local regulations. A motion to this end hasbeen made by one of the Congressmen from California. Our Washington correspondent says that Mr. Johnson has introduced a bill to enable miners to obtain title in fee to all classes of placer claims. Provision is made for the purchase, at a nominal price, of all such claims to which there is adverse title, in exact accordance with the rules and regulations of the mining districts in which they are situated; that is to say, the owner of a cement, hydraulic, or any gravel claim, may obtain title to just so much land as the mining laws of his district concede to him, and no more. The effect of such a privilege would add nothing to his claim, but only secure it against jumpers and interlopers, and give it a more definite negotiable value. With proper restrictions, such a bill would be of great benefit. It should fix some limit for the size of single placer claims hereafter located, taking the medium allowance under local relations, which can easily be ascertained. The range of individual claims in the gravel diggings is from thirty to one hundred feet front, running back from one hundred to three hundred feet; but there are instances of one hundred and fifty feet front being allowed, with a depth of three hundred to five hundred feet. Perhaps a safe and convenient limit would be half an acre—say ninety-nine by one hundred and ten feet. As nearly all the placer mining is now done by associations, this would enable five, ten or twenty persons to obtain as much land in the aggregate as they would need for actual mining purposes. If the price were fixed at the rate of $10 an acre, it would not be unreasonable. A company owning ten acres, representing twenty shares, would have to pay only $100, or $5 each, for perpetual and absolute security. Meanwhile there would be no interference with the size of claims taken up before the passage of the law. As a precaution against monopoly, a limit might be put to the amount of the land that might be held in one body by a single association; though we think this matter would better regulate itself. Companies could not acquire considerable tracts except by purchase, and would not be likely to purchase except to work it by such expenditures of money and labor, as would be broadly beneficial. A law of the kind proposed, amply protecting all existing rights, would meet with little of that opposition which was manifested a few years ago to any suggestion for a sale of the mineral lands. Its provisions should not apply to bar claims in creeks or rivers, which are small in extent and soon exhausted, and if held in perpetuity, might interfere with riparian rights; but they would be a great benefit in the deep hill diggings whether cement, tunnel or hydraulic, where no successful operations are now conducted, but by associations of capital and labor. With the security of good titles, there would be much more money invested for the development of these diggings, on a comprehensive and economical system. Since the passage of the law to provide for acquiring the fee to vein mines, quartz mining in California has received a great impetus. Many lodes have been taken up, entered and opened, that would have remained unknown or unworked till now, but for the security thus offered to persons able to undertake their development. There is no good reason why the advantages indicated should be confined to one class of mines. Most of the placer mining districts, now languishing under the old vagabond title-less system, might be restored to prosperity by encouraging capital to take hold under the security of United States patents. So long as claims are liable to be jumped if not worked, so many days in a given period; so long as the rules regulating their tenure may be changed at any time by a miner's meeting, capital will hesitate to embark in any mines but quartz. As the surface diggings, which could be worked at a profit by single individuals without money or machinery, are now nearly all exhausted, we must rely for the future success of placer mining upon associated, systematic, capitalized labor. Even the voluntary system without title tends to this, and to the steady aggregation of small claims. Why not give it the protection of law at once? A perfect statute might not be passed at first, but a year or two of experience would suggest all necessary amendments.

Strontium.

STRONTIUM is a white metal, quite heavy, oxydizable in the air, and decomposes matter at ordinary temperatures. It may be obtained from its oxyd by means of galvanic agency, and a process similar to that used to obtain barium. It was discovered by Sir Humphrey Davy in 1808, at the same time and in the same way that barium was discovered. The name strontium is derived from the mining village Strontia, in Scotland, near which the native carbonate of the metal was first found. Strontitic minerals are rare. Strontia, one of the alkaline earths, resembles a grayish-white powder, is infusible in the furnace, has an acrid, burning taste; it becomes hot when moistened, and changes into a pulverulent hydrate; it disolves in 150 parts of water at 60 deg. Fahr., and in a much less quantity when the water is at the boiling point. forming an alkaline solution called strontia water, which deposits crystals as it cools. It is readily distinguished from baryta by its inferior solubility and by its soluble salts giving a red tinge to flame, while those of barita give a yellow tinge. The compounds of strontia are not poisonous. The nitrate of strontia is used to make red fire in pyrotechnics, and for this purpose 800 grains of dry nitrate of strontia is mixed with 225 of sulphur, 200 of chlorate of potash, and 50 of lampblack. The strontia, the sulphur, and the lampblack are to be finely powdered and intimately mixed; the chlorate of potash in rather coarse powder is then added without much rubbing, or the sulphur will cause it to explode. It is liable to spontaneous combustion. Nitrate of stroutium is prepared from the sulphuret of strontium, obtained by decomposing sulphate of strontia with charcoal, by strongly igniting the mixed powders in a crucible. This sulphuret oeing treated with water, and the solution being filtered, is to be neutralized with nitric acid, as indicated by the test of tumeric paper, care being taken to avoid breathing the noxious sulphuretted hydrogen gas which is copiously disengaged. The neutral nitrate being properly evaporated and set aside, affords colorless, transparent, slender octahedral crystals. It has a cooling, yet somewhat acrid taste; is soluble in five parts cold, and in one-half part of boiling water, and also in alcohol. It is permanent in the air, deflagrates upon burning coals, gives off oxigen when calcined and leaves caustic strontia. The salt consists of about 49 parts of strontia and 51 of nitric acid. This salt is anhydrous; but there is another variety of it which contains nearly 40 per cent. of water of crystallization which occurs in large octahedrons. This is preferable for fireworks, because by effervescence it is easily obtained in a fine powder, which mixes more intimately with the chlorate of potash and charcoal for the composition of red or crimson fires.—*Journal of Chemistry.*

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